BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

EDITED BY

N. B. KINNEAR.

VOLUME XLVIII.

SESSION 1927–1928.

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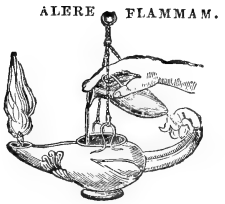

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RED LION COURT, FLEET STREET.

PREFACE.

During the past Session the number of attendances at the meetings of the Club was 360 members and 91 guests, a total of 451, a considerable increase from the previous year. The March dinner was held in conjunction with the British Ornithologists' Union as usual and was specially well attended.

Mr. B. W. Tucker's address on "A Review of Recent Work on Sex in Birds" at the May meeting was the chief event of the session, and his lucid exposition of this difficult subject was much appreciated. This paper was the outcome of a discussion which arose after the exhibition by Mr. D. Seth-Smith of a gynandromorphic Gouldian Finch (*Poephila gouldiæ*) at an earlier meeting.

The Club is again much indebted to Lord Rothschild for his exhibits. In this connection, we would like to mention the wonderful collection of hermaphrodites and gynandromorphs of various groups shown at the April meeting. At the final meeting of the Session, Lord Rothschild also exhibited an interesting series of Rails and their eggs from all parts of the world, including the previously unknown egg of the Inaccessible Island Flightless Rail (*Atlantisia rogersi*).

Other members (including the Chairman, Messrs. E. C. Stuart Baker, D. A. Bannerman, A. F. Griffith, A. L. Butler, H. C. Robinson, and W. L. Sclater) have exhibited interesting specimens at the meetings or contributed to the Club's proceedings.

N. B. KINNEAR,
Editor.

London, July 1928.

BRITISH ORNITHOLOGISTS' CLUB.

(Founded October 5, 1892.)

TITLE AND OBJECTS.

The objects of the Club, which shall be called the "British Ornithologists' Club," are the promotion of social intercourse between Members of the British Ornithologists' Union and to facilitate the publication of scientific information connected with ornithology.

RULES.

(*As amended, May* 9, 1928.)

Management.

I. The affairs of the Club shall be managed by a Committee, to consist of a Chairman, who shall be elected for three years, at the end of which period he shall not be eligible for re-election for the next term; an Editor of the 'Bulletin,' who shall be elected for five years, at the end of which period he shall not be eligible for re-election for the next term; a Secretary and Treasurer, who shall be elected for a term of one year, but shall be eligible for re-election. There shall be in addition four other Members, the senior of whom shall retire each year, and another Member be elected in his place; every third year the two senior Members shall retire and two other Members be elected in their place. Officers and Members of the Committee shall be elected by the Members of the Club at a General Meeting, and the names of such Officers and Members of Committee nominated by the Committee for the ensuing year, shall be circulated with the notice convening the General Meeting, at least two weeks before the Meeting. Should any Member wish to propose another candidate, the nomination of such, signed by at least two Members, must reach the Secretary at least one clear week before the Annual General Meeting.

II. Any Member desiring to make a complaint of the manner in which the affairs of the Club are conducted, must communicate in writing with the Chairman, who will, if he deem fit, call a Committee Meeting to deal with the matter.

III. If the conduct of any Member shall be deemed by the Committee to be prejudicial to the interests of the Club, he may be requested by the Committee to withdraw from the Club. In the case of refusal, his name may be removed from the list of Members at a General Meeting, provided that, in the notice calling the Meeting, intimation of the proposed resolution to remove his name shall have been given, and that a majority of the Members voting at such Meeting record their votes for his removal.

A Member whose name has been removed shall forfeit all privileges of Membership and shall have no claim on the Club from the date of his removal.

Subscriptions.

IV. Any Member of the British Ornithologists' Union may become a Member of the Club on payment to the Treasurer of an entrance-fee of one pound and a subscription of one guinea for the current Session. On Membership of the Union ceasing, Membership of the Club also ceases.

Any Member who has not paid his subscription before the last Meeting of the Session, shall cease, *ipso facto*, to be a Member of the Club, but may be reinstated on payment of arrears.

Meetings.

V. The Club will meet, as a rule, on the second Wednesday in every month, from October to June inclusive, at such hour and place as may be arranged by the Committee, but should such Wednesday happen to be Ash Wednesday, the Meeting will take place on the Wednesday following. At these Meetings papers upon ornithological subjects will be read, specimens exhibited and described, and discussion invited.

VI. A General Meeting of the Club shall be held on the day of the October Meeting of each Session and the Treasurer shall present thereat the Balance-sheet and Report; and the election of Officers and Committee, in so far as their election is required, shall be held at such Meeting.

VII. A Special General Meeting may be called at the instance of the Committee, for any purpose which they deem to be of sufficient importance, or at the instance of not fewer than fifteen Members. Notice of not less than two weeks shall be given of every General and Special General Meeting.

Introduction of Visitors.

VIII. Members may introduce visitors at any ordinary Meeting of the Club, but the same guest shall not be eligible to attend on more than three occasions during the Session. No former Member, who has been removed for non-payment of subscription, or for any other cause, shall be allowed to attend as a guest.

'Bulletin' of the Club.

IX. An Abstract of the Proceedings of the Club shall be printed as soon as possible after each Meeting, under the title of the 'Bulletin of the British Ornithologists' Club' and shall be distributed gratis to every Member who has paid his subscription.

Contributors are entitled to six free copies of the 'Bulletin,' but if they desire to exercise this privilege, they must give notice to the Editor when their manuscript is handed in. Members purchasing extra copies of the 'Bulletin' are entitled to a rebate of 25 per cent. on the published price, but not more than two copies can be sold to any Member unless ordered before printing.

Descriptions of new species may be published in the 'Bulletin,' although such were not communicated at the Meeting of the Club. This shall be done at the discretion of the Editor and so long as the publication of the 'Bulletin' is not unduly delayed thereby.

Any person speaking at a Meeting of the Club shall be allowed subsequently—subject to the discretion of the Editor—to amplify his remarks in the 'Bulletin,' but no fresh matter shall be incorporated with such remarks.

X. No communication, the whole or any important part of which has already been published elsewhere, shall be eligible for publication in the 'Bulletin,' except at the discretion of the Editor; and no communication made to the Club may be subsequently published elsewhere without the written sanction of the Editor.

Alteration and Repeal of Rules.

XI. Any suggested alteration or repeal of a standing rule shall be submitted to Members to be voted upon at a General Meeting convened for that purpose.

COMMITTEE, 1927–1928.

Dr. P. R. Lowe, *Chairman.* Elected 1927.
N. B. Kinnear, *Editor of the 'Bulletin.'* Elected 1925.
Dr. G. Carmichael Low, *Hon. Secretary and Treasurer.* Elected 1923.
G. M. Mathews. Elected 1925.
Major Stanley Flower. Elected 1926.
A. L. Butler. Elected 1927.
T. H. Newman. Elected 1927.

Officers of the British Ornithologists' Club, Past and Present.

Chairmen.

P. L. Sclater, F.R.S.	1892–1913.
Lord Rothschild, F.R.S.	1913–1918.
W. L. Sclater.	1918–1924.
H. F. Witherby.	1924–1927.
Dr. P. R. Lowe.	1927–

Editors.

R. Bowdler Sharpe.	1892–1904.
W. R. Ogilvie-Grant.	1904–1914.
D. A. Bannerman.	1914–1915.
D. Seth-Smith.	1915–1920.
Dr. P. R. Lowe.	1920–1925.
N. B. Kinnear.	1925–

Honorary Secretaries and Treasurers.

Howard Saunders.	1892–1899.
W. E. de Winton.	1899–1904.
H. F. Witherby.	1904–1914.
Dr. P. R. Lowe.	1914–1915.
C. G. Talbot-Ponsonby.	1915–1918.
D. A. Bannerman.	1918–1919.
Dr. Philip Gosse.	1919–1920.
J. L. Bonhote.	1920–1922
C. W. Mackworth-Praed.	1922–1923
Dr. G. Carmichael Low.	1923–

LIST OF MEMBERS.

JUNE 1928.

Adams, Ernest E.; Lloyd's, Royal Exchange, E.C. 3.

Alexander, H. G.; 144 Oak Tree Lane, Selly Oak, Birmingham.

Aplin, Oliver Vernon; Stonehill House, Bloxham, Banbury, Oxon.

Ardern, Lawrence; 7 Sussex Place, Regent's Park, N.W. 1.

Baily, W. Shore; Boyers House, Westbury, Wilts.

Baker, E. C. Stuart, J.P., F.Z.S., F.L.S.; 6 Harold Road, Upper Norwood, S.E. 19.

Bannerman, David A., M.B.E., B.A., F.R.S.E.; British Museum (Natural History), S.W. 7, and 132 Oakwood Court, Kensington, W. 14.

Barrington, Frederick J. F., M.S., F.R.C.S.; University College Hospital Medical School, Gower Street, W.C. 1.

Bates, G. L.; Bitye Ebolowa, French Cameroons.

Best, Miss M. G. S.; 28 Paulton's Square, Chelsea, S.W. 3.

Blaauw, F. E., C.M.Z.S.; Gooilust, s'Graveland, Hilversum, Noord-Holland.

Bobrinskoy, Count Alexis, M.A.; 5 Palace Gardens Mansions, W. 8.

Boorman, S.; Heath Farm, Send, Woking, Surrey.

Booth, H. B.; "Ryhill," Ben Rhydding, Yorks.

Boyd, A. W.; Frandley House, near Northwich.

Bradford, A. D.; Garsten House, near Watford.

Bradford, Sir J. Rose, K.C.M.G., M.D., F.R.C.P., F.R.S.; 8 Manchester Square, W. 1.

Brown, George; Hotel Suisse, Kandy, Ceylon, and The Close, Purton, Swindon, Wilts.

Bunyard, P. F., F.Z.S.; 57 Kidderminster Road, Croydon.

Butler, Arthur L. (*Committee*); St. Leonard's Park, Horsham, Sussex.

Buxton, Anthony; Knighton, Buckhurst Hill, Essex.

Chapman, F. M.; American Museum of Natural History, New York, U.S.A.

Charteris, Hon. G. L.; 26 Catherine Street, Buckingham Palace Road, S.W. 1.

Chasen, Frederick N.; Raffles Museum, Singapore.

Cheesman, Major R. E., O.B.E.; E. India United Service Club, 16 St. James's Square, S.W. 1.

Clarke, Brig.-General Goland van Holt, C.M.G., D.S.O. F.Z.S.; Brook House, Ardingly, Sussex.

Clarke, John P. Stephenson; Borde Hill, Cuckfield, Sussex.

Clarke, Col. Stephenson Robert, C.B., F.Z.S.; Borde Hill, Cuckfield, Sussex.

Cochrane, Captain Henry L., R.N. (Retd.); The Chase, Whaddon, Bletchley, Bucks.

Collett, A. K.; Oxford and Cambridge Club, Pall Mall, S.W. 1.

Collier, Charles, F.Z.S.; Bridge House, Culmstock, Devon.

Coltart, Neville; Guild Cottage, Epsom.

Congreve, Major W. M., M.C.; Hafod, Trefnant, Denbighshire.

Cox, Major-Gen. Sir Percy Z., G.C.I.E., G.C.M.G., K.C.S.I.; c/o Grindlay & Co., 54 Parliament Street, S.W. 1.

Cunningham, Josias; Fernhill, Belfast.

Curtis, Frederick, F.R.C.S.; Alton House, Redhill, Surrey.

Deane, Robert H.; Highlands, Iver Heath, Bucks.

Delacour, M. Jean; Chateau de Cleres (Seine-Inf.), France.

Delmé-Radcliffe, Lieut.-Col. A.; Shenley House, Headcorn, Kent.

Delmé-Radcliffe, Lieut.-Col. H., F.Z.S., F.R.G.S.; c/o Lloyds Bank (Cox & Co.'s Branch), F. Dept., 6 Pall Mall, S.W. 1.

Dewhurst, Captain F. W., Royal Marine L.I.; Elmwood, North End, Hampstead, N.W. 3.

Dobie, William Henry, M.R.C.S.; 2 Hunter Street, Chester.

Duncan, Arthur Bryce; Newlands, Dumfries.

Duncan, Walter Bryce; Newlands, Dumfries.

Ellis, H. Willoughby, F.Z.S., F.E.S., F.G.S.; Speldhurst Close, Sevenoaks, Kent.

Evans, Arthur Humble, M.A., D.Sc., F.Z.S.; 9 Harvey Road, Cambridge.

Ezra, A., O.B.E., F.Z.S.; Foxwarren Park, Cobham, Surrey.

Ferrier, Miss Judith M.; Hemsby Hall, Suffolk.

Finlinson, Horace W., F.Z.S.; 5 Rosamond Road, Bedford.

Fisher, Kenneth; School House, Oundle, Northamptonshire.

Fleming, James M.; Dildawn, Queen Edith's Way, Cambridge.

Flower, Major S. S. (*Committee*); Spencersgreen End, Tring, Herts.

Fromols-Rakowski, R. J.; Villa "Les Ilettes," 185 Promenade de la Corniche, Marseille, France.

Glegg, W. E.; The House, Albion Brewery, Whitechapel Rd., E. 1.

Goodall, J. M.; The Nest, Bembridge, Isle of Wight.

Grant, Capt. C. H. B., F.Z.S.; Ujiji, Kigoma, Tanganyika Territory, E. Africa, *viâ* Dar-es-Salaam.

Grey of Fallodon, Viscount, K.G., P.C., F.Z.S.; Fallodon, Christon Bank, R.S.O., Northumberland.

Griffith, Arthur F.; 3 Evelyn Terrace, Brighton.

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Gyldenstolpe, Count Nils; Royal (Natural History) Museum, Stockholm, Sweden.

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Haigh, George Henry Caton, F.Z.S.; Grimsby Hall, Great Grimsby, Lincolnshire.

Hale, Rev. James R., M.A.; Boxley Vicarage, Maidstone, Kent.

Harrison, Bernard Guy; 45 St. Martin's Lane, W.C. 2.

Harrison, Dr. James M., D.S.C.; St. Annes, 1 Tub's Hill, Sevenoaks, Kent.

Hart, S. H.; Estate Office, Hammonds, Checkendon, Reading.

Hartert, Ernst, Ph.D., F.Z.S.; The Museum, Tring, Herts.

Hawker, R. M.; Bath Club, Dover Street, W. 1.

Heath, R. E.; 54 Brompton Square, S.W. 3.

Herbert, Capt. E. G.; Bracken How, Sheringham, Norfolk.

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Hodgkin, Mrs. T. Edward; Old Ridley, Stocksfield, Northumberland.

Hopkinson, Emilius, C.M.G., D.S.O., M.B., F.Z.S.; Wynstay, Balcombe, Sussex, and Bathurst, Gambia, West Africa.

Hughes-Onslow, Henry, C.B.E.; 8 Cavendish Place, Cavendish Square, W. 1.

Hutson, Capt. H. P. W., R.E.; 67 Cottenham Park Road, Wimbledon, S.W. 20.

Inglis, C. McFarlane; Natural History Museum, Darjiling, India.

Ingram, Capt. Collingwood; The Grange, Benenden, Cranbrook, Kent.

Jabouille, Pierre; Hué, Annam, Indo-China.

Jackson, Sir Frederick J., K.C.M.G., C.B., F.Z.S.; 6 Gray's Inn Square, Gray's Inn, W.C.

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Kinnear, Norman B., F.Z.S. (*Editor of the 'Bulletin'*); British Museum (Natural History), Cromwell Road, S.W. 7.

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Kuroda, Dr. Nagamichi Fukuyoshi Cho, Akasaka, Tokyo, Japan.

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Laidlaw, Thomas Geddes; Halmyre, West Linton, Peeblesshire.

Lambert, Godfrey C.; Woodcote, Esher, Surrey.

Lewis, John Spedan, F.Z.S.; North Hall, Mortimer Crescent, Greville Road, St. John's Wood, N.W. 6.

Longstaff, Tom G., M.A., M.D., F.Z.S.; Picket Hill, Ringwood, Hants.

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McNeile, J. H.; Guards' Club, Brook Street, W. 1.

Magrath, Lieut.-Colonel H. A. F.; 43 Grosvenor Road, Westminster, S.W. 1.

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May, W. Norman, M.D.; The White House, Sonning, Berks.

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Musselwhite, D. W.; 59 Mayford Road, Wandsworth Common, S.W. 12.

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Nesham, Robert, F.Z.S.; Utrecht House, Poynder's Road, Clapham Park, S.W. 4.

Newman, T. H., F.Z.S. (*Committee*); Verulam, Forty Lane, Wembley, Middlesex.

Nichols, J. B., F.Z.S.; Parliament Mansions, Victoria Street, S.W. 1.

Oldham, Chas., F.Z.S.; The Bollin, Shrublands Road, Berkhamsted, Herts.

Osmaston, Bertram Beresford; 116 Banbury Road, Oxford.

Parkin, Thomas, M.A., F.L.S., F.Z.S.; Fairseat, High Wickham, Hastings.

Pearson, Charles Edward, F.L.S.; Hillcrest, Lowdham, Nottingham.

Penrose, Francis G., M.D., F.Z.S.; Rathkeale, 51 Surrey Road, Bournemouth.

Pershouse, Major S.; c/o Lloyds Bank (Cox & King's Branch), 6 Pall Mall, S.W. 1.

Pitman, Capt. C. R. S., D.S.O., M.C., Game Warden, Entebbe, Uganda.

Player, W. J. P.; Wernfadog, Clydach R.S.O., Glamorganshire.

Popham, Hugh Leyborne, M.A.; Houndstreet House, Pensford, Somerset.

Price, A. E., F.Z.S.; Culverwood House, Little Berkhamsted, Herts.

Pye-Smith, Geoffrey Henry Rutherford; 40 Cleveland Square, Hyde Park, W. 2.

Ratcliff, F. R.; 29 Connaught Square, W. 2.

Read, Robert H.; 10 South Parade, Bedford Park, W. 4.

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Ringrose, Bernard J.; Farley, Harbridge Green, Ringwood, Hants.

Rivière, B. B., F.R.C.S.; Hill House, Saxlingham, Norwich.

Robinson, H. C., C.M.Z.S.; 142 Duke's House, St. James's Court, S.W. 1.

Rothschild, Lionel Walter—Lord, D.Sc., F.R.S., Ph.D., F.Z.S. (*Chairman*, 1913–1918); Tring Park, Herts.

Sclater, William Lutley, M.A., F.Z.S. (*Chairman*, 1918–1924); 10 Sloane Court, S.W. 1.

Scone, The Rt. Hon. Mungo David—Lord; Scone Palace, Perth.

Seth-Smith, David, F.Z.S.; Curator's House, Zoological Gardens, Regent's Park, N.W. 8.

Seton, Sir Malcolm C. C., K.C.B.; 26 Upper Park Road, Haverstock Hill, N.W. 3.

Shipton, Wm., B.A., M.D.; 2 The Square, Buxton.

Sladen, Major A. G. L., M.C.; Kingswood House, The Lee, Great Missenden, Bucks.

Smalley, Frederic W., F.Z.S.; The Hawthorns, 193 Clapham Road, S.W. 9.

Snouckaert van Schauburg, Baron Rene Charles; Hôtel les Terrasses, Territet, Switzerland.

Sparrow, Col. R., C.M.G., D.S.O., F.Z.S., F.R.G.S.; The Lodge, Colne Engaine, Earls Colne, Essex.

Stares, J. W. C.; Portchester, Hants.

Stevens, Herbert; Clovelly, Beaconsfield Road, Tring, Herts.

Stokes, Capt. H. Stephen; Longdon, Rugeley, Staffordshire.

Stoneham, Captain H. F., O.B.E., F.E.S.; The East Surrey Demesne, P.O. Charangani, Trans-Nzoia, Kenya Colony, British East Africa.

Stuart-Menteth, W. G.; Bransfield, Godstone, Surrey.

Styan, F. W., F.Z.S.; Stone Street, near Sevenoaks.

Swynnerton, C. F. Massy; Poste Restante, Dar-es-Salaam, Tanganyika Territory, East Africa.

Taka-Tsukasa, Prince Nobusuke; 2 Fukuyoshicho, Akasaka, Tokyo, Japan.

Talbot-Ponsonby, C. G.; 5 Crown Office Row, Temple, E.C. 4.

Tavistock, Hastings William Sackville, Marquis of, F.Z.S.; Warblington House, Havant.

Thomson, A. Landsborough; 9 Addison Gardens, W. 14.

Thorpe, W. H.; 5 Regency Mansions, Hastings.

Ticehurst, Claud B., M.A., M.D.; Ham Street, near Ashford, Kent.

Ticehurst, N. F., O.B.E., M.A., M.B., F.R.C.S., F.Z.S.; 24 Pevensey Road, St. Leonards-on-Sea.

Tucker, B. W., B.A., F.Z.S.; 9 Marston Ferry Road, Oxford.

Turner, Miss E. L., F.Z.S.; The Half Way Cottage, 13 Storey's Way, Cambridge.

Turtle, Lancelot J.; Rosemount, Knock, Belfast.

Tyrwhitt-Drake, Hugh G., F.Z.S.; Cobtree Manor, Sandling, Maidstone.

Van Someren, Dr. V. G. L.; c/o Med. Depart. P.O. Box 140, Nairobi, B. East Africa.

Vernay, A. S.; 51 Berkeley Square, W. 1.

Waite, Herbert William; c/o Messrs. Grindlay & Co. Ltd., Bombay.

Wallis, H. M. Ashton Lodge, 68 Elmhurst Road, Reading.

Ware, R.; Leafwood, Frant, Tunbridge Wells.

Whistler, Hugh, F.Z.S.; Coldbec House, Battle, Sussex.

Whitaker, Joseph I. S., F.Z.S.; Malfitano, Palermo, Sicily.

White, S. J., F.Z.S.; 17 Philpot Lane, E.C. 3

Whitley, H.; Primley, Paignton, S. Devon.

Whymper, Samuel Leigh; Oriental Club, Hanover Square, W. 1.

Wilkinson, Johnson; Vermont, Huddersfield, Yorkshire.

Williams, Victor Owen; 6 Crown Office Row, Temple, E.C. 4.

Williamson, Sir W. J. F., C.M.G., F.Z.S.; c/o Lloyds Bank, 6 Pall Mall, S.W. 1.

Wing, J. Sladen; 21 Cheyne Gardens, Chelsea Embankment, S.W.3.

Witherby, Harry F., M.B.E., F.Z.S. (*Chairman*, 1924–1927); 326 High Holborn, W.C. 1.

Witherington, G.; Sumner Plat, Hayward's Heath.

Wood, Dr. Casey A., M.D.; c/o The Library of Ornithology, McGill University, Montreal, Canada.

C. R. Wood; c/o Messrs. Martins Ltd. (marked "Personal"), 54 Sussex Place, South Kensington, S.W. 7.

Workman, William Hughes, F.Z.S.; Lismore, Windsor, Belfast.

Worms, Charles de; Milton Park, Egham, Surrey.

New Members for the Session .. 10
Total number of Members 177

NOTICE.

[Members are specially requested to keep the Hon. Secretary informed of any changes in their addresses, and Members residing abroad should give early notification of coming home on leave.]

LIST OF AUTHORS

AND OTHER PERSONS REFERRED TO.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

No. CCCXVII.

The three-hundred-and-twelfth Meeting of the Club was held at Pagani's Restaurant, 42–48 Great Portland Street, W. 1, on Wednesday, October 12, 1927.

Chairman: Dr. P. R. Lowe.

Members present:—W. Shore Baily; E. C. Stuart Baker; D. A. Bannerman; F. J. F. Barrington; Miss M. G. S. Best; P. F. Bunyard; A. L. Butler; Major R. E. Cheesman; Brig.-General G. Clarke; Col. S. R. Clarke; Capt. H. L. Cochrane, R.N.; N. B. Coltart; Miss J. M. Ferrier; Major S. S. Flower; Rev. J. R. Hale; Dr. E. Hartert; R. E. Heath; Mrs. T. E. Hodgkin; Rev. F. C. R. Jourdain; N. B. Kinnear (*Editor*); J. Spedan Lewis; Dr. G. Carmichael Low (*Hon. Sec. & Treas.*); N. S. Lucas; Admiral H. Lynes; C. W. Mackworth-Praed; Capt. W. E. F. Macmillan; Sir Henry Macnaghten; Lt.-Col. H. Magrath; Dr. P. H. Manson-Bahr; Dr. W. N. May; E. G. B. Meade-Waldo; D. W. Musselwhite; T. H. Newman; C. Oldham; G. H. R. Pye-Smith; F. R. Ratcliff; C. B. Ricketт; H. C. Robinson; Lord Rothschild; W. L. Sclater;

D. Seth-Smith ; C. G. Talbot-Ponsonby ; W. H. Thorpe ; Dr. C. B. Ticehurst ; B. W. Tucker ; H. M. Wallis ; R. Ware ; H. Whistler ; V. O. Williams ; H. F. Witherby ; C. de Worms.

Guests present :—Capt. T. P. Aldworth ; C. J. Bellamy ; Dr. P. A. Buxton ; F. S. Chapman ; C. H. Donald ; H. Gladstone ; W. H. Hale ; G. J. Scholey ; C. Smeed ; W. A. William ; W. Wilkinson.

The following Delegates to the International Congress on the Protection of Migratory Wild Fowl were guests of the Club :—J. Dryver ; Prof. Dr. Lönnberg ; Dr. Schoenichen ; Dr. Schuster ; A. V. Taaning ; Dr. P. G. van Tienhoven ; Dr. G. J. van Oordt ; Dr. Weigold ; Prof. E. Wesenberg-Lund.

ANNUAL GENERAL MEETING.

This was held at Pagani's Restaurant, Great Portland Street, immediately preceding the Dinner. Mr. H. F. Witherby took the Chair. After the Minutes of the previous General Meeting were read and confirmed, Dr. G. Carmichael Low presented the Balance Sheet for the year. This had already been printed and circulated. It showed a very prosperous state of affairs, the Club now having a very substantial balance at hand for future eventualities. It was duly passed.

In his annual report the Hon. Secretary mentioned that the following members had resigned from the Club :—N. H. Foster, E. C. Hardy, L. M. Jopling, A. E. Learoyd, G. H. Lings, H. Massy, C. H. Roper, G. de H. Vaizey, Dr. A. Hope Walker ; while E. C. Arnold, C. D. Borrer, H. A. Gilbert, G. Mannering, O. R. Owen were removed under Rule I. and G. S. Ludlam and A. N. Rankin under Rule II. Two members had died—namely, B. A. Bristowe and Denis Cox. Against the loss of these 18 members, 10

BRITISH ORNITHOLOGISTS' CLUB.

Twelve months' Financial Statement, 1st September, 1926, to 31st August, 1927.

	£ s. d.	£ s. d.		£ s. d.	£ s. d.
To Balance in Hand, 1st September, 1926:—			By Printing and Distribution of Publications and 'Bulletin'		164 1 6
Cash at Bank, Current a/c .	139 7 5		,, Hire of Lanterns for Annual Dinner with B.O.U., etc.		7 7 0
do. Deposit a/c...	256 1 4		,, Contribution to Zoological Society Record		11 5 0
In Hands of Treasurer	3 3 11		,, Miscellaneous Expenses, including Audit Fee and Postages.....		10 0 10
		398 12 8			
,, Entrance Fees of 10 New Subscribers.....	10 0 0		Total Payments		192 14 4
,, Subscriptions—176 Members	187 19 0				
		197 19 0	,, Balance in Hand, 31st August, 1927:—		
,, Sales of 'Bulletin'		35 1 3	Cash at Bank, Current a/c ...	79 8 2	
,, Bank Interest		8 3 1	do. Deposit a/c	364 4 5	
,, Sundry Receipts		5 0	In Hands of Treasurer	3 14 1	
					447 6 8
		£640 1 0			£640 1 0

G. CARMICHAEL LOW, *Treasurer.*

We have compared the foregoing Statement with the books and vouchers of the British Ornithologists' Club for the year ended 31 August, 1927, and certify same to be in accordance therewith. We have also verified the balance of Cash at the Bank.

23 Queen Victoria Street,
London, E.C. 4.
16*th September*, 1927.

W. B. KEEN & CO.,
Chartered Accountants.

new ones had joined the Club, making a total of 176 on the books at the moment.

Dr. Percy R. Lowe was elected Chairman for the next three years in place of Mr. H. F. Witherby, retiring at the end of his term of office.

Dr. G. Carmichael Low was re-elected Honorary Secretary and Treasurer.

Mr. A. L. Butler and Mr. T. H. Newman were elected as members of the Committee in place of Dr. C. B. Ticehurst and Mr. Charles Oldham, retiring through seniority.

A proposal by Mr. Bunyard to reduce the term of office of the Chairman to one year instead of three was defeated.

Capt. Macmillan suggested that an Agenda of the proceedings of the meeting should be issued in advance to members. Several difficulties were pointed out, but it was finally decided that where anything important was to take place or if the programme was known then a note would be sent with the 'Bulletin' and the post-card for accepting the Dinner.

The Meeting then adjourned to Dinner.

Committee, 1927–1928.

Dr. P. R. Lowe, *Chairman* (elected 1927).
N. B. Kinnear, *Editor* (elected 1925).
Dr. G. C. Low, *Hon. Sec. & Treasurer* (elected 1923).
G. M. Mathews (elected 1925).
Major S. S. Flower (elected 1926).
A. L. Butler (elected 1927).
T. H. Newman (elected 1927).

Proceedings at the Meeting following the Dinner.

Several of the delegates to the International Congress on the Protection of Migratory Wild Fowl, which is being held in London at the moment, were present.

Dr. Percy Lowe said that his first task as the newly-elected Chairman of the B. O. C. was a very happy one.

It was to extend, on behalf of the members present, a very cordial welcome to the distinguished foreign guests and ornithologists who had been dining with them that night.

As all who were present were probably well aware, an International Conference was being held at the Foreign Office, and their guests were taking part in it.

The ultimate aim and object of that conference was the suggestion and consideration of measures designed for the sole purpose of ensuring the future welfare of the migratory wild-fowl of Europe, and they might hope of their sensible increase in numbers.

Before those measures could be formulated there was a considerable amount of preliminary enquiry to be gone through and various problems to be solved, but the Chairman felt sanguine from what he had already noted during the discussions which had taken place that day that nothing but good would be likely to result from the deliberations of our foreign visitors.

Three main problems, in his opinion, had to be faced, viz. :—

(1) The question of excessive commercialism in regard to the taking of wild-fowl for the market.

(2) The limitation of the open season in the late winter or early spring.

(3) The provision of winter sanctuaries, to form some respite from the constant persecution to which wild-fowl perhaps more than any other kind of bird-life were liable. This continual disturbance lasted from the moment the various species of wild duck or waders had left their breeding-grounds in the autumn until they returned to them in the following spring. They were fair game and a fair mark for everyone, and had no secure resting-place by day or night.

In conclusion, the Chairman pointed out that they were especially indebted to Professor Einar Lönnberg, in that it was to him they owed the idea of initiating that conference.

Moreover, Professor Lönnberg had not only done that but he had succeeded in enlisting the active official support of his own government, and following that the official support of the governments of Denmark, Finland, Germany, Great Britain, and Holland. As far as the Chairman was aware, no ornithological conference had ever before succeeded in gaining the active official backing of any State. He thought that in that respect they might congratulate themselves that that conference marked a happy stage in ornithological progress.

The following communication was received from Capt. C. R. S. Pitman, *Game Warden, Uganda, too late for insertion in the June 'Bulletin.'*

I was much interested in the May number of the 'Bulletin' to read Mr. D. A. Bannerman's remarks in regard to the unnecessary cruelty with which live birds are exported to the United Kingdom and Europe from West Africa. I recently travelled from Mombasa to Marseilles in a steamer which was carrying several hundreds of birds and a few mammals for zoological dealers and others.

As Game Warden of Uganda, and in co-operation with the Game Wardens of the other British Territories in Eastern Africa, I spare no efforts to discourage all forms of collecting live animals for export, and collecting agents receive scant sympathy, as it is well known that the first cardinal principle of game-preservation is the fact that no profit should be made out of game.

In this connection, I have had a good deal of correspondence with a certain British importer, and I was amazed to find that animals collected for this individual were apparently consigned to him by ship without any adequate arrangements being made for the comfort of the captives. By this I mean that a collection of about 770 Love-birds were crushed into ten small wooden cases with wire fronts. The birds were just jammed into a solid mass, those nearest the grain and water troughs obtained sustenance—as for the rest, they starved! Originally, there were so many birds in each box

that many had to stand on each other. The boxes were so low that the struggling inmates continually bruised their heads, eventually knocking off all their feathers and damaging their crowns. Such birds were killed by their neighbours. There were no facilities for cleaning the cages, and the condition of the birds in tropical temperatures was deplorable. This collection was handed over to the captain of the ship, who was asked to look after and feed the animals and to hand them over to the importer's representative at Marseilles. I am not certain at which port this collection was shipped, but before we left Mombasa nearly half the unfortunate birds had perished, this in spite of the fact that the captain had made arrangements for the ship's carpenter to make a number of additional and more roomy cages, and the remnants of the luckless birds were housed in fully sixteen boxes.

I understand that such happenings are of no unusual occurrence, and it seems to me high time that drastic steps were taken to ensure fair treatment to such helpless captives.

[As a result of Mr. Bannerman's and Captain Pitman's communications, members of the Club will be glad to hear that the Zoological Society of London are taking action in the matter, and a Committee has been formed, with representatives from various Societies, including the B. O. C., to enquire into the matter of the treatment of wild animals, birds, etc., and make suggestions for their care on board ship, etc.—Ed.]

Dr. E. Hartert gave a short account of his trip, in which he was accompanied by Mr. Hachisuka, to North Africa, Tunisia, Algeria, and Morocco, and mentioned the more interesting birds met with.

He also made some remarks on the different Museums and collections which he and Lord Rothschild visited in Eastern Europe after attending the Zoological Congress at Buda Pesth.

Mr. A. L. Butler exhibited some Humming-birds of special interest to Trochilidists, and made the following remarks :—

Selasphorus floresii Gould.

Through the kindness of Mr. G. Bowes Loddiges, the owner of the collection formed by his great-grandfather George Loddiges, I am able to exhibit to-night the very beautiful Humming-bird which is the type of Gould's *Selasphorus floresii*, and the subject of plate 139, vol. iii., in his 'Monograph of the Trochilidæ.'

The unpublished MS. notes of George Loddiges, as quoted by Gould, show that this bird was given to him by the collector Floresi, who was then in London, on August 11th, 1845, with the information that he had obtained it at Bolaños, in the State of Jalisco, Mexico.

No similar specimen has ever reached Europe, but three birds almost identical with it have since been obtained in California, and are listed by Ridgway ('Birds of North and Middle America,' part v. p. 617), as follows :—

One from San Francisco, 1885.
„ „ Haywards, Alameda Co., Feb. 20th, 1901.
„ „ Nicasio, Marin Co., Feb. 26th, 1909.

The best authorities—Hartert, Ridgway, and Simon—are of opinion that this bird does not represent a species, but is a hybrid between *Calypte anna* (Less.) and a *Selasphorus*, either *S. alleni* Henshaw or *S. rufus* (Gmel.). I am therefore passing round with it examples of three possible parent species, and it will be seen that the bird has the glittering crown of a *Calypte* and the tail of a *Selasphorus*.

Ridgway has suggested that this bird also was possibly obtained in California and not at Bolaños, Floresi having collected there as well as in Mexico. I believe this suggestion to be right, as the MS. notes of George Loddiges mention that Floresi at the same time gave him specimens of *Calypte anna*, *Calypte costæ*, and *Stellula calliope*, which he said were obtained "at the same place" as the *Selasphorus*.

All these three are well-known Californian species, the first two of which have not, even on the winter migration, been recorded from as far south as Bolaños.

Acestrura astreans Bangs.

I exhibit a pair of this species from the Sierra de Santa Marta, Colombia, as, though it was described as long ago as 1899, I do not know of any other specimens in England. It differs from all other birds of the genus in the peculiar bluish colour of the male (very like that of *Calypte helenæ* of Cuba) and in the female having the central tail-feathers green instead of rufous.

Damophila cyaneotincta (Gounelle).

The bird shown is the type of Gounelle's *Polyerata cyaneotincta*, described and figured in the 'Revue Française d'Ornithologie,' No. 2, 1909, p. 17, pl. i. It is a "Bogotá" skin, and nothing else is known about the bird, the type so far remaining unique. I also pass round the plate which accompanied Gounelle's description.

Heliotrypha luminosa (Elliott).

This is one of the rarest and most beautiful of Hummingbirds. I think only two other examples are known—the type from Gould's collection in the B.M., figured in the 'Catalogue of Birds,' and a younger bird with a less developed throat-patch at Tring.

The known skins, of which this is the most perfect, have come from Bogotá collections without exact locality. Elliot, in describing the species ('Ibis,' 1878, p. 188), placed it in the genus *Iolæma*, but, as pointed out by Gounelle, it is a *Heliotrypha* nearest to *H. barrali* and *H. speciosa*, if these two species are distinct.

In the 'Catalogue of Birds' the date of Elliot's description is wrongly given as 1876, instead of 1878. I mention the error, as Gounelle, Cory, and Simon have copied it in their references.

The next few birds are examples of deviation from the normal coloration of their species :—

Heliangelus mavors Gould.

The male shown by the side of a normally coloured example is very interesting, as it combines two forms of heterochrosis : (1) partial albinism (not very uncommon in Humming-birds, though complete albinos are very scarce), the tawny buff of the pectoral band and underparts and the dark colour of some of the primaries being replaced by whitish, and (2) the absence of the luminous orange-red colour on the forehead and throat, and of the shining green of the back and sides.

Both this bird and the generic position of the *Heliotrypha luminosa* were discussed by Gounelle, from whose collection I obtained them, in a little pamphlet which he printed privately, and of which I pass round a copy. It bears no date, and I do not know to what extent it was circulated.

The glittering and luminous colours in Humming-birds are caused by the reflections given off by the ridged prismatic surface of a thin transparent casing which covers the pigment-cells of the feathers, the pigment itself being usually brown or blackish brown. In this bird the chocolate-brown of the throat and blackish brown of the back would appear to be the actual pigment-colour, a failure to produce the prismatic coating causing it to reach the eye unaltered.

If the normally coloured bird is held between the eye and the light, and looked at across the throat, a position in which the reflecting surfaces do not come into play, the colour appears of the same dark brown.

Boissonneaua flavescens (Lodd.).

The brownish example shown with a normal one is another, though less complete, case of variation due to the same cause.

Cases of melanism, more or less complete, appear to occur in the Humming-birds more often than other variations, and

I am showing, with normally coloured specimens, melanistic examples of :—

Petasophora iolata Gould.

Chlorostilbon prasinus prasinus (Less.).

Sapphironia goudoti (Bourc.).

Eriocnemis alinæ (Bourc.).

Eriocnemis cupreiventris (Fraser).

A similar melanism of the last species was described by Elliot as *Eriocnemis dyselius* and is figured in the 'Catalogue of Birds.'

Mr. H. F. Witherby exhibited adults, young, and an egg of the White-spotted Bluethroat (*Luscinia svecica cyanecula*), which he had found breeding in June 1927 in some numbers on broom-covered slopes between 4000 and 6500 feet in the Sierra de Gredos, Central Spain. Mr. Witherby did not know of any previous record of the breeding of this species in the Spanish Peninsula. It bred in Vendée and Charente Inférieure, but apparently not further south in western France.

Mr. Witherby also made some remarks on the breeding-habits of the Black Vulture (*Ægypius monachus*), as observed by him in pine-forests in the Sierra de Gredos.

Mr. N. B. Kinnear described a new race of Sand-Grouse, *Pterocles coronatus*, and made the following remarks :—

Through the kindness of Mr. G. M. Lees the British Museum has received a small collection of birds made in the Oman Peninsula, where Mr. Lees has been prospecting for oil on behalf of the Anglo-Persian Oil Corporation.

The country in which Mr. Lees worked is very rugged, and consists of hills and ravines of black or dark grey serpentine rock with a narrow, more or less flat strip of country along the coast. Unfortunately, Mr. Lees was continually moving about, and in consequence his specimens have rather suffered.

The most interesting birds in the collection are two pairs of Coronetted Sand-Grouse, which are much darker than birds from Muscat, Persia, or Sind, and, I think, sufficiently distinct to be distinguished by a name :—

Pterocles coronatus saturatus, subsp. nov.

Similar to *P. coronatus atratus* from Persia, but in the ♂ generally darker all over and with a strong wash of grey on the lower throat and breast. The ♀ is also darker and the dark markings below broader.

Type in the British Museum. ♂. Ajib, 20 miles inland between Shinas and Murair, Oman Peninsula. December 1925. Collected by J. Fernandez. Reg. No. 1926.5.31.1.

Material examined. 3 ♂ ♂, 2 ♀ ♀ of the new form and a number of *P. c. atratus.*

Note.—Birds from Muscat belong to the Persian form, and not, as might have expected, to the new race.

Other interesting birds in the collection are *Leptocoma asiatica brevirostris*, *Argya squamiceps squamiceps*, and *Lanius excubitor buryi.*

Mr. David Bannerman forwarded the description of a new Frigate-bird from the Cape Verde Islands and Gambian coast which he proposed to name

Fregata magnificens lowei, subsp. nov.

Adult male. Most nearly allied, as first pointed out by Lord Rothschild * and confirmed by Dr. Lowe, to *Fregata magnificens*, which it resembles in its large size and in having the feathers of the mantle and scapulars glossed with iridescent purple. The white-breasted female has the pointed brown gorget on the chest ; the feature which stamps it as unquestionably belonging to a different race from *F. m. rothschildi,* which extends down the Western Atlantic Coast of America from the Bahamas to Brazil, is the enormous bill, measuring from the gape 145 mm. in the ♂, 151 in the ♀.

* Nov. Zool. xxii. p. 146 (1915).

The soft parts of the type are given as: Iris black, leg and feet brownish black, webs black, gular pouch claret. In the flesh it measured 38·5 inches in length, the wing 24 inches.

Type in the British Museum. ♂. Boavista, Cape Verde Is. May 1897. Collected by Boyd Alexander. Reg. No. 1911.12.23.172.

The female mentioned was shot off the Gambia, and is in the British Museum.

This Frigate-bird is named in honour of Dr. Percy Lowe, whose valuable review of the Fregatidæ in the 'Novitates Zoologicæ,' vol. xxxi., has cleared up most of the points at issue in this difficult group.

It is unfortunate that in the recent 'Systema Avium Ethiopicarum' the Frigate-bird of the Cape Verde Islands and the Gambia is stated as "probably being *Fregata minor nicolli*." The females of *F. magnificens* and *F. minor* groups are very distinct (*cf.* Nov. Zool. xxxi. pl. xxii.).

Mr. Sclater communicated the following notes, chiefly on the African Warblers, which he had recently been arranging for the forthcoming second volume of the 'Systema Avium Ethiopicarum':—

Seicercus ruficapilla johnstoni, subsp. nov.

Description. Resembling *C. r. ruficapilla*, but the yellow of the throat more restricted and not extending on to the breast, and the crown of a darker shade of brown—instead of dark mustard shade, it is almost sienna-brown. In other respects resembling the typical race.

Type a ♂ from Kombi, Masuka Range, north-west of Lake Nyasa at about 7000 ft. Collected by A. Whyte for Sir Henry Johnston, after whom the bird is named. Brit. Mus. Reg. No. 97.11.4.73.

Dimensions of type. Wing 56 mm., tail imperfect, culmen 10. Not differing appreciably from the typical race.

Remarks. The type and only example of this race in the collection was identified by Captain G. E. Shelley ('Ibis,' 1897, p. 536) as *Cryptolopha rufucapilla*, which is found in

South Africa from Knysna to Natal and the Eastern Transvaal, but not north of the Zambesi.

Baker (Fauna Brit. Ind. Birds, new ed. ii. 1924, p. 485) has shown that *Seicercus* must be used for these little Warblers instead of the better-known *Cryptolopha*.

Eremomela griseoflava archeri, subsp. nov.

Description. Resembling *E. g. flavicrissalis*, but distinctly larger—wing 52 to 55, as against 47 to 50 mm. in the Juba-land birds ; also the yellow of the underside, which in *E. g. flavicrissalis* is very pale and confined to the immediate region of the vent, is spread all over the lower abdomen ; the grey of the upper surface is slightly browner, but this varies somewhat.

Measurements of type, a ♂ collected at Burao, Somaliland, 9 January, 1906, by G. W. Bury. Brit. Mus. Reg. No. 1908.12.22.54.—Wing 52 mm. ; tail 29 ; tarsus 16 ; culmen 9.

Distribution. This new form, up to now confounded with *E. g. flavicrissalis*, replaces the last-named in British Somaliland, and the British Museum possesses a fair series from Waghar and Burao, collected by Bury, from Sogsoda (*Lort Phillips*), Mackanis (*Hawker*), and Dubbar (*Archer*). The type of the other race, *E. g. flavocrissalis*, came from Webbe Shebeli in south-western Somaliland, and there are in addition examples from northern Kenya Colony—Marsabit Road (*Percival*) and the Northern Guassa Nyiro (*Delamere*).

List of the Races of *Eremomela griseoflava*.

The genus *Eremomela* was founded by Sundevall on *Sylvia flaviventris* Burchell, 1824, obtained in the Asbestos Mts. of Griqualand West. In 1920 Mr. Oberholser pointed out that Burchell's name was preoccupied by *Sylvia flaviventris* Vieillot, 1817, and renamed the South African bird *E. g. perimacha* (Proc. Biol. Soc. Washington, xxxiii. p. 84). The group-name thus became *Eremomela griseoflava*.

The following is the list of races which appear to be valid during a recent revision of the material in the British Museum :—

Eremomela griseoflava perimacha Oberholser.

Type-locality. Asbestos Mts., Griqualand West. Synonyms : *Sylvia flaviventris* Burchell nec Vieillot; *Eremomela d marensis* Sharpe ; *E. flaviventris sharpei* Reichw. *Distr.* Damaraland and Angola; east to Lake Ngami, Bechuanaland, western Transvaal, and Griqualand West.

E. g. saturatior O.-Grant.

Type-locality. Deelfontein. *Distr.* Central and Eastern Cape Province, and the Orange Free State Province.

E. g. polioxantha Sharpe.

Type-locality. Swaziland. Synonym : *E. helenorae* Alexander—Mesangue, Zambesi Valley. *Distr.* S. Belgian Congo ; N. Rhodesia and Nyasaland, south to Mashonaland, the eastern Transvaal, and Swaziland.

E. g. abdominalis Reichw.

Type-locality. Igonda Tabora district. *Distr.* Central districts of Kenya Colony south to central districts of Tanganyika Territory.

Hardly separable from *E. g. polioxantha*, but perhaps a little more brownish and less grey above.

E. g. karamojensis Stoneham.

Type-locality. N. Karamoja, N.E. Uganda. *Distr.* N.E. Uganda to the lake districts of S. Abyssinia.

E. g. griseoflava Heuglin.

Type-locality. Bogosland. Synonym : *E. flaviventris sudanæ* Stoneham : Sennar. *Distr.* Eritrea; Red Sea Province and Sennar district of Sudan.

Examples from Darfur are intermediate between this and the next race.

E. g. ALEXANDERI Scl. & Praed.

Type-locality. Bara, Kordofan. Synonym: *E. flaviventris saharæ* Stoneham: Zinder, French Sudan. *Distr.* From Zinder and Aïr to Lake Chad, Kordofan, and the White Nile above Khartoum.

E. g. CRAWFURDI S. Clarke.

Type-locality. Loita Plains, S.W. Kenya Colony. Synonym: *E. f. tardinata* Hartert: Sagayo, Mwanza district, Tanganyika Territory. *Distr.* Country south and south-east of Victoria Nyanza.

E. g. FLAVICRISSALIS Sharpe.

Type-locality. Sheboli River, W. Somaliland. Synonym: *E. erlangeri* Reichw.: Garra Liwin. *Distr.* Southern and Western Somaliland west to the Northern Guasso Nyiro in N. Kenya Colony.

E. g. ARCHERI W. Scl. (see above).

Camaroptera brachyura kelsalli, subsp. nov.

Description. Most closely allied to *C. b. chloronota* Reichw., but differing in its slightly smaller size, shorter tail, the absence of the olive-green wash across the chest, and the presence of a distinct buffy-reddish wash round the eye and on the ear-coverts.

Type in the British Museum. A ♂ near Tungea, N.N.E. of Bo, Sierra Leone, 12 Sept., 1912. Collected by Major H. J. Kelsall, R.A. B.M. Reg. No. 1914.4.14.57.

Measurements of the type in the flesh by H. J. K.: length 105 mm.; wing 53; tail 28; bill 15; tarsus 23. The wing now measures only 50, having perhaps shrunk.

Remarks. Major Kelsall obtained two adults—the type and a similar bird at Moyamba on 24. ix. 1912. Also what I take to be two young birds with pale yellow throats and nearly white bellies also obtained about the same time.

These birds were identified by Major Kelsall ('Ibis,' 1914, p. 205) as *Camaroptera chloronota*, but they appear to represent an undoubtedly distinct race.

A single skin from Abouri, Gold Coast Colony, obtained by Captain Shelley and Mr. Buckley ('Ibis,' 1872, p. 291) appears to be also referable to this race.

On the Identity of *Poliolais helenoræ*, Alex.

When examining this little Warbler, which was discovered by Boyd Alexander in Fernando Po, I was struck by its resemblance to another bird described by him at the same time and named *Apalis lopezi*, also from Fernando Po. The latter bird, though placed in the genus *Apalis*, is obviously not at home there, as it has a very much shorter and smaller tail with only the central feathers like the back, the rest being white. On comparing the examples of the two species preserved in the Natural History Museum with one another, I became quite convinced that they represented the two sexes of one bird. The three *lopezi* are all sexed male, and two of the three *helenoræ* sexed female.

An examination of the two examples of the allied form, *Poliolais alexanderi* Bannerman from Cameroon Mountain, only served to confirm my previous conclusions. The female has the same brown cap as *helenoræ* and the male resembles *lopezi*, but in the case of both sexes the olive-green wash of the back is sufficient to differentiate the Cameroon Mountain bird from the Fernando Po bird.

I would therefore arrange the genus *Poliolais* as follows :—

Poliolais lopezi lopezi.

Apalis lopezi Alexander, Bull. B. O. C. xiii. 1903, p. 35 : Bakaki, Fernando Po.

Poliolais helenoræ Alexander, ibid. p. 36 : Bakaki.

Distr. Confined to Fernando Po.

Poliolais lopezi alexanderi.

Poliolais alexanderi Bannerman, Bull. B. O. C. xxxv. 1915, p. 53 : Cameroon Mt.

Distr. Confined to Cameroon Mountain.

Sylvietta virens tando, subsp. nov.

Description. Very close to *S. v. virens* from Cameroon and Gaboon, but the cap is of a slightly lighter shade and less dusky; the back is a much lighter green than that of *S. v. virens* or *S. v. baraka*, the Uganda race; and below the centre of the breast and belly is white, not grey; in size the Angola bird appears to be about the same size as the Cameroon bird, but the bill appears to be slightly smaller.

Type. A male collected 31. x. 08 by Dr. W. J. Ansorge at N'Dalla Tando in northern Angola. B.M. Reg. No. 1910.5.6.906. Iris neutral-orange, feet pale burnt sienna; bill, upper mandible dark brown, lower purplish grey. Wing 54 mm.; tail 20; tarsus 19; culmen 12.

Remarks. The female is slightly smaller, wing 49 mm.; a good series of four males and five females was obtained by Dr. Ansorge at N'Dalla Tando; and there is also a bird, obtained by Petit, from Landana in Portuguese Congo, in the British Museum, which must be referred to the same race.

Prinia ansorgei, sp. nov.

Description. Male. Above grey without any darker striping on the feathers, a little more tinged with pale brown on the wings and tail, and traces of a white edging to the secondaries and wing-coverts, and a faint white eyebrow; below white, the throat and chest pure, the breast and belly with a faint wash of yellow; a few dusky spots on the breast; the tail with the usual characteristic subterminal dusky spots and pale tip on the underside, hardly noticeable on the upperside. "Iris neutral-orange, feet yellow-ochre, bill black, paler at the base of the lower mandible" (*Ansorge*). Length about 130 mm.; wing 51; tail 72; culmen 12.

Type in the British Museum. Huxe, Angola, 5 Sept., 1905. Collected by Dr. W. J. Ansorge. B.M. Reg. No. 1906.12.4.149.

The female is like the male, but slightly smaller: wing 48 mm. It is, perhaps, a shade browner and less grey above

and is apparently without the breast-spots which distinguish the male.

This form is very distinct from all the others of the genus. It differs from *P. gracilis* in the plain unstriped upper surface and from *P. mistacea*, a race of which, *P. m. graueri*, occurs in Angola, in its smaller bill, longer tail, and presence of spots on the breast.

There is a good series of this new form, which has remained so long innominate in the Museum. Fifteen examples, male and female, were obtained by Dr. Ansorge in September and October 1905 at Huxe, Catumbella, and near Benguella Town, all in southern Angola.

Mr. Toku T. Momiyama sent the following descriptions of six new birds from Japan, Korea, and Sakhalin :—

Garrulus japonicus nakaokæ, subsp. nov.

Differs from *G. j. japonicus* in having on the average a shorter bill, wing, and tarsus, but the bill a little broader and thicker. The upper surface and abdomen are a little darker.

Measurements.

	G. j. nakaokæ.	*G. j. japonicus.*
	mm.	mm.
Exposed culmen ..	24·5–27·5 (av. 25·8)	25·0–29·0 (av. 27·1)
Wing	159–172 (av. 165·6)	159·5–180 (av. 169·2)
Tarsus.....	34·5–39·0 (av. 37·4)	35·0–42·0 (av. 39·1)

Types in Athenæi Ornithologici Momiyamici. ♂ ad. and ♀ ad. Kuroiwamura, Takaoka-gun, Prov. Tosa in Sikoku, 17th January, 1927. Sent by Mrs. Koma Nakaoka. Registered Nos. 27.0068 and 27.0070.

Material examined. Nine specimens, compared with thirty-five specimens of typical form from Hondo.

Distribution. Probably all over Sikoku Island.

Garrulus japonicus hiugaensis, subsp. nov.

Nearest to *G. j. nakaokæ* from Sikoku, but distinguished by its general darker coloration. Comparing with other northern races, the whitish-striped colour of the occiput is

suffused with the deep brownish colour of the back. This form is intermediate between *G. j. nakaokæ* and *G. j. orii*.

Measurements. A trifle larger than *nakaokæ*. Wing 160–173·5 mm., an average of 167·7 mm.

Types in Athenæi Ornithologici Momiyamici. ♂ ad. and ♀ ad. Nisimera-mura, Koyu-gun, Prov. Hiuga, February 1927. Collected by Tomogorô Tanaka. Registered Nos. 27.0075 and 27.0076.

Material examined. Six examples of the new race from provinces Hiuga and Higo, of southern Kiusiu.

Distribution. Probably confined within southern Kiusiu.

Note.—The form found in northern Kiusiu resembles *nakaokæ*, but the bill is much shorter and measures from the nostril 17·5 mm. As, however, only one example is available, it is impossible to say if that difference is constant.

Parus major tatibanai, subsp. nov.

Compared with *P. m. wladiwostokensis* (specimens from Korea), the wing and tail are somewhat shorter, and the band on wing pure white, without any dark tinge to the white on greater coverts. Entire lower parts, except the limited median black patch, tinged with lighter yellow.

Measurements.

	P. m. tatibanai.	*P. m. wladiwostokensis.*	
	Sakhalin.	Korea.	Vladivostok.
Wing, ♂	65·5–70·5 mm.	68·5–71 mm.	71–73 mm.
„ ♀	66·5 „	66–68 „	—
Tail, ♂	60–66 „	65–66·5 „	68–70·5 „
„ ♀	58 „	56·5–62 „	—

Types in Athenæi Ornithologici Momiyamici. ♂ ad. æst. and ♀ ad. æst. Konuma, Toyokita-mura, Toyohara-gun, S. Sakhalin, 23rd April, 1926. Collected by Matakiti Tatibana from Sakhalin. Coll. Nos. 120 and 121.

Material examined. Four males and one female.

Distribution. Probably confined to Sakhalin Island.

Strix uralensis tatibanai, subsp. nov.

Readily distinguished by the smaller size from *S. u. nikolskii*. The dark phase in general coloration resembles most nearly *S. u. japonica*, but it may easily be distinguished from that form by the whole surface of a paler tint, and in having the head and back more tinged with ochre. The size is larger than *japonica*.

Measurements.

S. u. japonica.	Hokkaido ..	Wing, 267–313 mm.;	tail, 201–235 mm.
S. u. tatibanai	Sakhalin....	„ 316–338 „	„ 241–260 mm.
S. u. nikolskii.	S.E. Siberia .	„ 330–350 „	

Type in Athenæi Ornithologici Momiyamici. ♂ ad. Keton, Sisuka-gun, Sisuka Prefect-District, S. Sakhalin, 4th November, 1926. Collected by Matakiti Tatibana. Coll. No. 491.

Material examined. Ten examples from Sakhalin.

Distribution. Probably confined within Sakhalin Island.

Strix uralensis morii, subsp. nov.

Distinguished from the dark phase of *S. u. tatibanai* by the deeper brown, less greyish colour. The feathers of both forms are mottled in the same manner. The wing-coverts, under surface, and feathers of the feet and toes are more buffish brown.

Measurements. Wing, ♀, 326–330 mm.; tail 230–254 mm.

Type in Athenæi Ornithologici Momiyamici. ♀ ad. Vicinity of Seoul, Keiki District in Korea, 5th March, 1927. Sent by Mr. Tamezô Mori. Provisional No. 1x.30.

Material examined. Two specimens from N. Heian and Keiki Districts.

Distribution. Confined to Korean peninsula, except northernmost part.

Strix uralensis nigra, subsp. nov.

Darker sepia than *S. u. fuscescens* of Northern Kiusiu. The paler sepia markings on the feathers barely indicated ; the face, head, hind neck, back, and wing-coverts are very dark sepia.

Measurement. Wing, ♀, 325, 326 mm.; tail 229 mm.

Type in Athenæi Ornithologici Momiyamici. ♀. Prov. Ohsumi, spring in 1924. Purchased. Provisional No. 1x.39.

Distribution. Southern districts of Kiusiu.

Notes on *Alectoris chukar*, with Descriptions of six new subspecies.

On behalf of Dr. P. P. Sushkin, the Editor forwarded the following descriptions :—

Alectoris chukar * caucasica, subsp. nov.

Nearest to *cypriotes* Hart., but still greyer and lighter. In spring, back of neck largely light neutral-grey; interscapulium and inner scapulars greyer than mouse-grey; the narrow band across the interscapulium brownish-drab. Crown of the head tinged with fawn. White eyebrow-stripe broad, 4–5 mm. Ear-coverts light chestnut, without blackish. Black bars of the flanks broad, as in *cypriotes*; chestnut edgings dark, and present on few feathers only.

Rather large: wing, ♂ 160, ♀ 140 mm.

Type in the Zool. Mus. Russ. Acad. Sci., 8398, ♂, Akhaltzykh, Transcaucasia, 25 (13) May, 1878, Mikhalovski leg.

Twelve specimens examined.

Distribution. Main Caucasus range, both slopes.

Note.—Birds from Ararat, Kars, and Erzerum seem to be slightly different, the fawn tinge of the interscapulium being more vivid and appearing also on the inner scapulars and innermost secondaries. My material is insufficient for recognizing or rejecting them as separate form.

* I prefer to treat as belonging to *Alectoris græca* only the forms *græca* and *saxatilis*, and to consider the remaining Chukar partridges, beginning by *cypriotes* in the west and with the exception of *magna*, as forming a separate species, *A. chukar*, with numerous subspecies. I hope to return to this question elsewhere.

Alectoris chukar shestoperovi, subsp. nov.

Similar to *caucasica*, but paler and duller above (rump and tail-coverts between mouse-grey and deep olive-grey), black bars of the flanks narrower, 3·5–5 mm. instead of 4·5–7 mm.

Wing 157–162 mm.

Type in the Zool. Mus. Russ. Acad. Sci., 15491, ♂, Asilme, Kopet-dagh, near Askhabad, Transcaspia, 19 March, 1926, Shestoperov leg.

Sixteen specimens examined.

Distribution. Massif, Great Balkhan (Transcaspia), and Kopel-dagh, about as far east as the meridian of Askhabad. From near Kaakhka (59½° E. long., 37½° N. lat.) begins the area of *koroviakovi*, which inhabits Eastern Persia.

Alectoris chukar fallax, subsp. nov.

Differs from *falki* Hart. (Russian Turkestan) in being somewhat paler and duller on the upper side, the white eyebrow-stripe narrower; the crown of the head uniform fawn-colour; the chest paler and with narrow black bars on the flanks. Nape light neutral-grey washed with greyish-olive; fore part of the interscapulium light cinnamon-drab or somewhat brighter, this coloration extending on to the outer webs of the secondaries and partly on to the wing-coverts; hind half of the interscapulium between drab and light greyish-olive; rump, upper tail-coverts, and wing almost olive-grey. Chest lighter than in *falki*, strongly washed with yellowish down the middle, and the black bars of the flanks narrow, 2–4 mm.

Wing, ♂ 150–164 mm., ♀ 146–151.

Type in the Zool. Mus. Russ. Acad. Sci., 13635, ♂, Kyzyl-synyz, Kuruk-tag range east of Bagratch-Kul Lake, syst. of Eastern Tian Shan, December 1893, Roborowski and Kozlov leg.

Fourteen specimens examined.

Distribution. Southern slopes of the Eastern Tian Shan system, and Northern Kashgaria (Utch-Turfan, Ak-su, between Ak-su and east of Bagratch-kul).

Obs. Three specimens from the head-waters of Taushkandarya (riv. Kaïndy) belong here, but, owing to their broader eyebrow-stripes and feebler development of the fawn crown-patch, are intermediate between that form and *falki*.

Other pale forms from western parts of Asia to be taken into account here are: *pallescens* Hume (Kharbu, Ladakh), *pallida* Hume (Karakash River, Chinese Turkestan, N. slope of Western Kwen-lün), and *subpallida* Zarudn. (hills of Kyzyl-kum desert, Russian Turkestan). Dr. Hartert (Novit. Zool. 1917) unites *pallescens* and *pallida*. On examination of a beautiful specimen of *pallescens*, in breeding-plumage, from type-locality (coll. by Col. R. Meinertzhagen), and of our series of eighteen birds from Kwen-lün system between Karyadarya and Kumboldt range, I prefer to keep these forms separate, their distinctive characters agreeing fully with those pointed out by Hume.

A. c. pallida is the palest, and looks as though it was dusted through with clay powder; grey tints pale and strongly yellowish on the upper side (nape and lower back with tail-coverts near smoke-grey, wing more yellowish); superciliary stripe washed with buff; chest pallid neutral-grey, the fore half covered with olive-buff; belly and lower tail-coverts paler than pinkish buff; black bars of the flanks narrow, 2–3 mm., chestnut edgings pale and few; quills very light, near drab. Wing 150–170 mm.

Distribution. Southern part of the Chinese Turkestan (Kwen-lün system), northern part being inhabited by *fallax*.

A. c. pallescens is a pale form, much lighter than *falki* but darker than *pallida*, and different from the latter by nearly pure grey colours of the nape and back (near pale neutral-grey); wings between mouse-grey and olive-grey; black bars of the flanks broader, 3–5 mm. Seems to be proper to Karakorum range, occurring at much higher levels than *pallida*.

A. c. subpallida is of equal intensity of coloration as *pallescens*, also with pure tone of the grey of the nape and lower back; crown only washed with vinaceous, without a crown-patch; interscapular region of a less yellowish tint than in

pallescens (light cinnamon-drab in the fore half, behind lighter and paler than light drab); cinnamon-drab of the upper back does not extend upon the sides of the chest; wings paler and more yellowish than in *pallescens*; anteapical edgings of the external web of the secondaries broad, 5 mm., and strongly tinged with buff (in *pallescens*, narrow and whitish). Wing, ♂, 166–170 mm.

Distribution. Desert Kyzyl-kum and Western Bokhara.

Alectoris chukar potanini, subsp. nov.

Similar to *falki* Hart., but differs in the breeding-plumage in the following characters:—Bright fawn covers the whole of the crown, leaving only a narrow stripe of grey above the white eyebrow-stripe. Eyebrow-stripe narrow, 2·5–3 mm.; grey colour of the nape extends only for about 1 cm. in length, being almost covered by brownish in fresh plumage. Base of the hind-neck and fore part of the interscapular region between vinaceous-fawn and onion-skin pink, this colour extending broadly upon the sides of the chest. Posterior part of the interscapulium washed with yellowish. Lower back and upper tail-coverts near neutral-grey tinged with greenish. Chestnut edges of the flank-feathers less developed than in *falki*; black bars 4–5 mm. Innermost secondaries more or less tinged with cinnamon.—From *fallax* it differs in the darker coloration, purer hues, and broader bars of the flank-feathers. From *pubescens* differs by purer hues of grey (lower back light neutral-grey instead of light greyish-olive) and absence of prevailing rosy-vinaceous tint of the upper side.

Wing, ♂ 154–169 mm., ♀ 148–158.

Type in the Zool. Russ. Acad. Sci. 13639, ♂, Burgusten-gol, Alaskan range, Kozlov leg., 31 (18) May, 1908.

Fifty specimens examined.

Distribution. Alashan range, probably also hills of Central Gobi between it and Mongolian Altai, and the whole of the Mongolian Altai from its easternmost end as far west as the headwaters of the Kara-Irtysh and middle course of Kobdo; south-western and southern slope of Khangai. To this form

belong also two birds from northern slope of eastern Tianshan west of the meridian of Urumtchi.

Note.—Birds from Alashan range and Khurkhu Mts. are somewhat brighter, the fawn belt of the upper back being broader, of a cinnamon tint, extending on to the innermost secondaries, and the wing being slightly lighter and more greyish. Birds from near Kobdo are generally duller, the fawn belt of the back narrower, no reddish on the innermost secondaries, and the wing somewhat darker. Birds from Ikhe-bagdo are nearer to the Kobdo birds. But the difference is not constant, a brighter bird having been found even at Khandagatai, sources of the Kara-Irtysh.

Alectoris chukar dzungarica, subsp. nov.

Narrow eyebrow-stripe, fawn patch occupying nearly whole of the crown, scarcely developed grey on the nape, sides of the chest coloured with fawn, narrow vinaceous band of the fore interscapulium, and reddish tinge nearly or totally absent on the wings as in *potanini*. Differs from *potanini* by darker coloration above and on the chest, and more developed white on the flanks. In spring, the crown-patch fawn, narrowly bordered on the sides and in front by neutral-grey; nape neutral-grey to deep olive-grey for about 1½ cm.; band across the fore interscapulium darker and of a more rosy tinge than fawn-colour, the remainder between drab and mouse-grey; rump and tail-coverts darker than neutral-grey and tinged with olivaceous, wing mouse-grey. Chest pale neutral-grey, in the fore-half washed with deep olive-buff, sides of the chest rosy-fawn. Interspaces of black flank-bars with white prevailing.—From *falki*, which is nearest geographically, it differs in the dark grey colour of the upperside and wing, narrow white supercilium, large crown-patch, narrow fawn band of the interscapulium, and more white on the flanks.

Wing, ♂ 153–163 mm., ♀ 145–158.

Type in the Zool. Mus. Russ. Sci., ♂, Monrak range, Tarbagatai system, Kolomiitzov leg., 4 May (22 Apr.), 1878.

Thirty specimens examined.

Distribution. Tarbagatai and northern Semiretchie, bassin of Ito included; east as far as Kuldja and Algo (to the south-west, from Vernoie and Issyk-kul, begins the range of *falki*; in the east, near Urumtchi on the northern slope of eastern Tianshan, *potanini* has been found, and on the Algo river begins the range of *fallax*, range of *dzungarica* wedging in between them).

Alectoris chukar obscurata, subsp. nov.

Similar to *potanini* and *dzungarica*. Darker than all the foregoing. In winter much darker and of a greyer tone above than corresponding plumage of *dzungarica*; crown-patch near benzo-brown, posterior part of the interscapulium greener than mouse-grey, rump and tail-coverts near neutral-grey, greener and darker; chest darker than pale neutral-grey; flanks as in *dzungarica*.

Wing (not sexed) 147–159 mm.

Type. Sushkin's private collection, part of the Tannu-ola range (winter, 1913.3.14, western), obtained through merchants from native hunters.

Eight specimens examined.

Distribution. Western part of the Tanu-ola range, probably both slopes; possibly also southern slope of the West-Sayan (bassin of Kemchik).

Substitution of a Name.

Dr. Sushkin also sent the following note on the name *Perdix hodgsoniæ occidentalis*:—

"In the Bull. B. O. C., No. cccviii. (Nov. 1926), I have described a new form of *Perdix hodgsoniæ* as *P. hodgsoniæ occidentalis*. Dr. Cl. B. Ticehurst has pointed out to me that this name is preoccupied by *Perdix daurica occidentalis* Buturlin, and I wish therefore to substitute the following name:—

Perdix hodgsoniæ nanshanicæ, nom. nov.

(=*Perdix hodgsoniæ occidentalis* Sushkin, Bull. B. O. C. 1926, nec *Perdix daurica occidentalis* Buturlin, 1908.)

Admiral Lynes invited attention to a phase of geographical variation occurring in some of the species of the *Cisticola* group. He said :—

The phase of geographical variation to which I venture to draw your attention occurs particularly in Equatorial East Africa, more or less Kenya Colony, Uganda, south of about Lat. 4° N,, and the northern part of Tanganyika Territory.

Outside Equatorial East Africa.

With little exception, the species of *Cisticola* vary geographically as other species are found to do more or less all over the world ; the most prevalent expression of such variation being in small differences in dimensions and of external colour, colour-pattern, and form among aggregates of individuals of the same age, sex, and season. There are definite breeding- and off-seasons ; the former more or less coincident with the rains and the growth of herbage, and there is a pre-nuptial or spring moult which changes the whole plumage except the remiges, and in many species the breeding or summer dress thus acquired is very different from the off-season or winter dress. But there is no particular novelty in the phases of geographical variation among the species, nor any difficulty in defining such variation and expressing it in the customary terms of nomenclature.

In Equatorial East Africa.

About half (some 22) of the known species of *Cisticola* are present, the majority of which also range in unbroken specific continuity, far and wide elsewhere over the Continent.

But nearly all of these species are represented by forms (aggregates) which have a perennial adult dress with single annual complete moult—in other words, do not have the spring moult which puts their outside brethren into a special breeding-dress.

In a general way, the perennial dress of these forms is most comparable with one or other of the two seasonal dresses of

the neighbouring race outside, but in variable degree among the different species—for instance, that of one species may be so alike as to beindistinguishable from the outsider's summer dress, of others very like the outsider's winter dress, or it may be a half-and-half mixture of the two. Then, again, some aggregates have the perennial dress so far "perfected"* as to be represented in immaturity, in others the immature and even adult dresses are scarcely, if at all, distinguishable from those of outsiders.

At first sight, having the perennial dress rather suggests simplifying definition of these aggregates, and in some species actually does so, but not in all, for two reasons, which after all are only what ought to be expected :—

(*a*) the boundaries of this equatorial enclave are not at all precise ones.

(*b*) evolution in progress is indicated here and there by the presence of almost every degree of imperfection in the adult perennial dress.

One consequence of (*a*) is the existence of types which are not typical of the local aggregate (in the corresponding dress, of course). Happily these are few.

One consequence of (*b*) is that alongside aggregates quite comprehensible as separate geographical units, there occur (besides intermediates) lesser aggregates of the same species whose individuals cannot be distinguished from members of other outside races. What is the best treatment—definition and nomenclature—here ?

Several lines of thought suggest themselves, such as :—

Should the lesser aggregate with the pseudo-outside dress be lumped with the outside race it resembles ? This will be convenient for the label-names of such specimens and stowing them away in a box, and will require acceptance of the possibility of two different subspecies breeding alongside one another ?

* The expression is not intended to suggest the single moult as necessarily having been evolved from the double moult phase.

Or should all the individuals inhabiting the territory wherein the variant forms occur be lumped together and defined as such with the name of (or a name for) the most prevalent form of dress? This will be easy and will subordinate the definition and the name to geography—the locality and not the characters of the bird will say what the bird is!

Or should the phase of geographical variation be treated in the same manner as we are obliged to do that of birds whose colour-variation appears to be indiscriminate—like, for instance, *Scotornis* in many parts of its range?

This is perhaps the line of least resistance, and it relegates to comparative oblivion a general principle which, although likely to prove more widely useful to ornithological inquiry than merely throwing light, as it has done, on relationships among the *Cisticola* kind, our present system of nomenclature is tiresomely ill-adapted to accommodate!

My forthcoming 'Review of the Cisticolas' will show in detail how each species is affected by this phase of variation. I regret, however, that for various reasons—our trip to Africa, reproduction of pictures, etc.—publication cannot be expected before next spring, so welcome the present opportunity of asking for opinion as to the most suitable method of treatment of the phase in question.

That it is related to climate and breeding activity is at least highly probable, and, if collectors will recognize the importance of recording the state of the latter on their specimen-labels, we shall soon be in a position to know a great deal more about it.

Here is an example of extreme "wandering" of the perennial dress boundaries (exhibited). Near Lake Tana, about 500 miles north of the average northern limit of the perennial-dress enclave, and where normally the species has very different winter and summer dresses, Major Cheesman has recently collected some specimens of *Cisticola natalensis* in worn summer dress at the close of their normal breeding-season. Among these is one ad. ♂ which had started to moult into the normal winter dress, and another

ad. ♂ to moult back again into the normal *summer* dress—that is, like the dress it had just been breeding in.

I should like to add that recognition of this peculiarity in *natalensis* is not entirely new. Dr. Van Someren drew attention to it in his treatise on the "Birds of East Africa" in Nov. Zool. xxix. p. 212 (1922).

Mr. Bunyard gave a very interesting account of his experiences in watching, at Cliffe-at-Hoo, Kent, the same Cuckoo which he had under observation in 1925 and 1926 :—

On June 1st he watched the Cuckoo go to a Reed-Warbler's nest, cling on to the sides, and go through the same performance as described in the 'Bulletin' for last October (*cf.* xlvii. p. 45, 1926). This time, however, when she withdrew her head for the second time, Mr. Bunyard observed that she had a Reed-Warbler's egg in her beak, which she swallowed whole and "then thrust her head into the nest for the third time, as though she were trying to secure the remaining Warbler's egg, threw herself back to the left, and took off."

Leaving his "hide" Mr. Bunyard went and examined the nest, but was disappointed to find only one Reed-Warbler's egg—there were originally two—and no Cuckoo's. As there had been no attempt at a deposition, the whole proceedings had only been a raid.

On June 28th Mr. Bunyard paid a final visit to Cliffe, when he again had an unobstructed view of a Reed-Warbler's nest with two eggs. After watching from a "hide" 8 ft. from the nest for about an hour, he had a clear view of the Cuckoo on a thorn-bush, and it certainly had no egg in its beak. She disappeared, and then a few minutes later he saw her approaching the nest, again no egg in the beak !, on reaching which "she clung on to the side, as previously seen on two occasions, with her back towards the 'hide,' but slightly sideways with her shoulders level with the top of the nest. She then thrust her head and neck into the nest, slightly withdrew, repeating the operation, and on withdrawing I saw she had

a Warbler's egg in her bill. She then turned towards the 'hide,' took off gracefully, and flew away." Mr. Bunyard immediately examined the nest, which now contained one Warbler's egg and one Cuckoo's egg, the whole operation taking only 8 seconds.

When at the nest, Mr. Bunyard said the Cuckoo's "body and limp drooping wings almost concealed the nest from my view. She neither went on to, or over, the nest, and obviously the only possible way her egg could have reached its destination was by regurgitation."

Mr. Bunyard went on to say that during his many visits to Cliffe he "saw absolutely nothing to support the theory of normal oviposition, which has no scientific data to support it, is economically unsound, and physically impossible."

The theory of regurgitation, he pointed out, appears first to have been put forward by A. H. Meiklejohn in the 'Zoologist' for 1900, but Le Vaillant seems to have been the first discoverer that the White-bellied Didric Cuckoo (*Lampromorpha caprius* Bodd.) of South Africa carried her egg in the throat.

Fabre ('Animal Life in Field and Garden,' p. 60), Mr. Bunyard further remarked, definitely states, but on what authority he did not know, that the Cuckoo lays its egg on the ground, swallows it, and regurgitates it into the nest of the fosterer.

Mr. Bunyard exhibited 47 eggs of the Cuckoo under observation, produced by her during the last three seasons, and remarked on their great similarity to one another and close resemblance to the fosterer, the Reed-Warbler.

He also showed five eggs of another Cuckoo, a younger bird and supposed to be a daughter of the original Cuckoo, which had this season invaded her territory, fought with her, carried out some raiding, as well as depositing five eggs. These eggs, he considered, were even more like Reed-Warblers' than those in the series above referred to.

According to Mr. Bunyard, the original Cuckoo deposited in 1925 an egg every 48 hours, but in 1926 and 1927 there were breaks in the deposition, which he considered was strong evidence in support of Capek's theory that a Cuckoo

normally lays a clutch of from 4–7 eggs and that two clutches are laid in a season.

As regards the eggs of the younger birds, Mr. Bunyard said he was convinced that they were those of a "daughter" and he added that large clutches of Cuckoo's eggs were in his opinion the result of forcing or the joint production of "mother" and "daughter."

Finally, Mr. Bunyard put forward the theory that if a generation of Cuckoos are brought up by Reed-Warblers, they would in time produce eggs similar to them, since undoubtedly food must play a very important part in the composition of the blood, liver, and bile secretions.

A young Cuckoo, he suggested, brought up on Reed-Warbler diet would naturally show a preference for that food. This, Mr. Bunyard considered, might be the possible explanation of the process of assimilation, which is gradually taking place in the eggs of the Cuckoos that have become parasitic on certain species.

Mr. Bunyard added that he would like to support the various statements made by Mr. G. J. Scholey from time to time in the Press, and which he had had ample opportunity of verifying, and at the same time pay tribute to his knowledge of the habits of the Cuckoo and thank him cordially for the great assistance he had given him in his investigations.

NOTICES.

The next Meeting of the Club will be held on Wednesday, November 9, 1927, at PAGANI'S RESTAURANT, 42–48 Great Portland Street, W. 1. The Dinner at 7 p.m.

Members intending to dine are requested to inform the Hon. Secretary, Dr. G. Carmichael Low, 86 Brook Street, Grosvenor Square, W. 1.

Members who intend to make any communication at the next Meeting of the Club are requested to give notice beforehand to the Editor, Mr. N. B. Kinnear, at the Natural History Museum, South Kensington, S.W. 7, and to give him their MSS., for publication in the 'Bulletin,' not later than at the Meeting.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

No. CCCXVIII.

The three-hundred-and-thirteenth Meeting of the Club was held at Pagani's Restaurant, 42–48 Great Portland Street, W. 1, on Wednesday, November 9, 1927.

Chairman: Dr. P. R. Lowe.

Members present:—W. Shore Baily; E. C. Stuart Baker; D. A. Bannerman; F. J. F. Barrington; P. F. Bunyard; The Hon. Guy Charteris; Capt. H. L. Cochrane, R.N.; N. B. Coltart; A. Ezra; Major S. S. Flower; Dr. E. Hartert; R. E. Heath; Rev. F. C. R. Jourdain; Dr. G. Carmichael Low (*Hon. Sec. & Treas.*); N. S. Lucas; Admiral H. Lynes; C. W. Mackworth-Praed; Sir Henry Macnaghten; Dr. P. H. Manson-Bahr; E. G. B. Meade-Waldo; C. Oldham; C. B. Rickett; H. C. Robinson; Lord Rothschild; W. L. Sclater; D. Seth-Smith; H. Stevens; A. Landsborough Thomson; B. W. Tucker; H. F. Witherby.

Guests present:—W. Raw.

Chairman's Address.

Members of the B. O. C.,—

In accordance with a custom now fast becoming time-honoured, I propose as your Chairman to give to-night a summary of the chief ornithological events of the past session, during which the club lost two members by death and several by resignation. Two congresses were held—firstly, there was an International Zoological Congress at Budapest in August, and, secondly, an International Congress for the Protection of Migratory Wild Fowl held at the Foreign Office in London in October. Lord Rothschild and Mr. Hartert attended the first, while Mr. Hugh Gladstone and myself, as the official delegates of Great Britain, attended the second. In addition to Great Britain, Belgium, Denmark, Finland, Germany, Holland, and Sweden also sent delegates. A report of the proceedings and the resolutions passed will shortly be published in the Press by the Home Office.

As regards work in the field, Messrs. J. Delacour and Willoughby Lowe have again brought back further large collections from French Indo-China, and, as a result, no less than two genera and seventy-one forms have been described as new to science. This expedition constituted their third visit to this interesting zoological region, and they are now on their way back to collect in Cambodia—a course which, I may add, has been rendered to a great extent possible by the interest shown by Mr. Spedan Lewis.

Admiral Hubert Lynes and Mr. B. B. Osmaston have spent six months in various African regions, travelling throughout a great part of the entire length of the continent, and making a special study of species belonging to the genus *Cisticola*. The interesting results obtained put the finishing touches to the monumental monograph of the genus which the former is publishing early in the New Year. Six hundred examples of various species were obtained, besides many nests and eggs and a small general collection, which includes two new birds.

Major R. E. Cheeseman has sent home during the year three collections of birds, which he formed while in Northern Abyssinia. These collections contained many species of considerable interest and several forms new to the British Museum collection, besides a specimen of the hitherto-unique Francolin (*Francolinus harwoodi*).

Colonel and Mrs. Meinertzhagen did some excellent work in Sikkim last winter, and their scientific results of this have already been published in the 'Ibis.'

We regret to learn that Mr. C. F. Belcher has left Nyasaland for Cyprus, but perhaps he will still continue his ornithological studies among the birds of that very interesting island. We understand, too, that Mr. G. L. Bates is contemplating an expedition in West Africa, which will extend from Lagos in Nigeria to Dakar in Senegal, and will probably occupy him a year.

Coming to various regions not quite so far afield, our late Chairman, Mr. Harry Witherby, has once more visited Spain. Major Congreve accompanied by Colonel Payn also made a journey to South Spain. The Rev. F. C. R. Jourdain was busy again in the early summer in Algeria.

Dr. Hartert, in company with Mr. Hachisuka, made a motor journey along the coast of North Africa, which he has already described to us at our October meeting.

Colonel Meiklejohn was occupied in Corsica during the months of April and part of May. Mr. H. Whistler was also in Corsica ; while Mr. David Bannerman made a short journey in Senegal and brought back a small collection of skins and birds in spirit.

Finally, Sir Geoffrey Archer has again been travelling in Somaliland, as well as in Abyssinia, and has brought home a small collection of skins to furnish further material for his new book.

Turning to a consideration of work in the field by ornithologists of other countries, we find that Mr. J. P. Chapin, of the American Museum of Natural History, has been actively employed collecting on the mountainous eastern border of the Congo, where he collected no less

than some 12,000 birds—chiefly, I believe, on the western slopes of Ruwenzori. To my great personal regret, he did not succeed in finding Lord Rothschild's *Pseudocalyptomena* in the volcanic district of Kiwi, as I was hoping he would bring me a specimen in the flesh, so that we could ascertain if, indeed, it was a Broadbill or no.

Dr. Schouteden has also been collecting in the Belgian Congo and getting together a collection of over 4000 birds; while yet another visitor to this region (this time a Frenchman) may be mentioned in the person of Mr. Guy Babault.

Still keeping to Africa, we learn that Dr. H. Granvik, of Sweden, has again been collecting on Mount Elgon on the borders of Uganda and Kenya Colony. On this occasion his activities extended over a period of ~~eight~~ months, during which we are informed some 2000 bird-skins were collected.

Further north Dr. Wilfred Osgood and the late Mr. Louis Fuertes have made a comprehensive zoological collection in Abyssinia, on behalf of the Field Museum of Chicago. Both passed through London on their way home, and Mr. Fuertes brought a number of spirited sketches of birds to the British Museum for identification. Hardly, as it seemed to some of us, had they had time to reach their homes in the States, when the dismal news of Mr. Fuertes's tragic death arrived.

Passing to South America, Dr. Emilie Snethlage (an Hon. Lady Member of our Union) has been travelling in Central Brazil on behalf of the National Museum at Rio de Janeiro, and got as far as the Ouro Buto Mountains in Minas Geraes. She has now started on a fresh expedition into the State of Goyaz.

Finally, we must not forget Dr. Rensch's work in obtaining a large collection of birds from the Little Sunda Islands.

So much, then, for the chief events in the field. Before passing on to a brief notice of the principal ornithological works and papers which have been published during the last Session, I may, perhaps, be excused for referring to one

phase of activity which seems to be especially characteristic of the present period, and which is intimately connected with activity in the field. I mean the strong desire evinced by both collectors and institutions to effect exchanges. That may be a perfectly legitimate desire in itself, but I should like to take this opportunity of pointing out that the intensive collecting of large series of rare or geographically isolated species, over and above one's immediate or legitimate requirements, for the *deliberate* purpose of acquiring material for future exchanges, is surely an action which should be strongly condemned and rendered impossible by local regulations.

Leaving the field and coming to work in the study, I have, among many papers and books of more than ordinary scientific interest, selected the following; and if my choice has been arbitrary, and has shown a want of merely temporary consideration for a good many others, I hope I may be excused, and due allowance made for the mass of material which has been put forth :—

First of all, I think we must mention Mr. Gregory Mathews, who, by the publication of volume xii., has completed his great work on the 'Birds of Australia,' which he commenced in 1910. This indefatigable author has also published (on behalf of the B. O. U.) the first part of the 'Systema Avium Australasianarum,' which contains all the non-Passerine birds of the Australasian region.

Mr. Stuart Baker, too, well deserves our congratulations for having issued his fourth volume of the Second Edition of the 'Birds of British India'—a volume dealing with the Picarians and Owls,—while in addition he has published articles on Waders in the Journ. Bomb. Nat. Hist. Soc.

Next, I think, comes Dr. F. M. Chapman with his splendid contribution dealing with the 'Distribution of Bird Life in Ecuador.' After that we have a long list of well-known authors, whom I refer to in no particular order. For instance, there is :

Count Gyldenstolpe's Catalogue of the Types of Birds in the Stockholm Museum.

Dr. Hartert's seventh contribution dealing with the types in the Tring Museum, etc.

Mr. Rowan on the Causes of Migration.

Her. Lehn Schiöler's second volume of his great work on the Birds of Denmark.

Lord Rothschild on the Avifauna of Yunnan.

Mr. J. H. Riley's paper on the Birds of the same region.

Colonel Meinertzhagen's review of the genus *Corvus*.

Mr. Bannerman's paper on the Birds of Tunisia.

Mons. Lavauden's Journey across the Sahara.

Dr. Stresemann's interesting paper on the Shrikes of the *Lanius cristatus* Formenkreis.

Dr. Claude Ticehurst's articles on the Birds of Baluchistan in the Journal Bombay Nat. Hist. Soc.

Mr. B. B. Osmaston on the Birds of Kashmir.

Col. Meinertzhagen on the Birds of Sikkim.

Prof. Einar Lönnberg's Origin of the N. American Ornithic. Fauna.

Mr. Dixon on the Nesting of the Surf-Bird (*Aphriza virgata*).

Mr. C. W. Richmond's new list of Generic Names.

Mr. Hellmayr's Catalogue of American Birds.—Part V. Tyrannidæ.

Sig. Festa's Zoological Mission to Cirenaica.

MM. Delacour and Jabouille, Birds of French Indo-China (Arch. d'Hist. Nat.). This volume contains an account of his second expedition to French Indo-China, and describes 443 species and races, of which 32 are new and 71 additions to the fauna of Indo-China.

M. Heim de Balsac, Birds of Southern Algeria.

Mr. T. A. Coward has completed another volume on the Birds of the British Isles, giving an account of their migration and habits.

Mr. Cleveland Bent has published yet another of his Life-Histories of North-American Birds, dealing with the Herons, Cranes, Rails, and Flamingo.

Mr. F. E. Blaauw has published a most attractive work on his travels in Kenya Colony, giving an account of his

journey, with observations on the birds met with, illustrated with numerous photographs.

Coming to forthcoming works, we are anxiously awaiting Mr. H. C. Robinson's 'Birds of the Malay Peninsula,' and the Plates of Mr. W. E. Waite's 'Birds of Ceylon.'

Finally, many new species have been described, notably by Mr. Stuart Baker, Mons. J. Delacour, Mr. Kuroda, and Mr. Hachisuka, while I cannot refrain from drawing attention to Lord Rothschild's remarkable exhibition of drawings and examples illustrating melanistic forms in various families of birds.

The Chairman then exhibited, on behalf of Major Dorrien Smith, an example of the American Night-Hawk, *Chordeiles virginianus*, which had been shot this autumn by the latter at Tresco Abbey, in the Scilly Isles. This was the first occasion on which this species had been taken in the British Isles.

Lord Rothschild exhibited two Humming-birds which have hitherto been considered as hybrids, together with the supposed parent species. He said in his opinion the one bird was an undoubted hybrid between *Stellula calliope* (Gould) × *Calypte costæ* (Bourc.). The only point to be noticed was that, while the general distribution of the metallic colouring was that of the *Calypte*, the narrow elongated feathers at the side of the iridescent jugular patch showed clearly the character of *Stellula*.

The other bird was more of a puzzle: it is an *Oreotrochilus* with the green throat-patch of *O. chimborazo* Del. & Bourc. much reduced in size. Now, while *O. chimborazo* is confined to the volcano of that name, *O. jamesoni* Jard. is now known not only to inhabit the volcanoes of Cotopaxi and Pichincha, but also the whole mountain-chain from Cuenca to Chimborazo. As we have no specimen absolutely certainly collected on Chimborazo so far recorded, Dr. Hartert and other authors treat *chimborazo* and *jamesoni* as subspecies of one species *chimborazo*. But the probability is that sooner or later the entirely purple-throated *jamesoni* will turn up on Chimborazo, and the opinion of the exhibitor be confirmed that *O. chimborazo* and *O. jamesoni* are dimorphic forms of one species.

The Rev. F. C. R. Jourdain gave an account of his travels in Marocco during the spring of the present year. Arriving at Philippeville on March 23rd, he noted the first Alpine Swift on that day, and at once went on by train to Constantine, where there were about 40 nests of *Ciconia ciconia* in the Arab quarters, and between there and Ouled Rahmoun about 70 more were counted. Probably quite 100 of these nests were in use, so that this district seems to be the headquarters of the White Stork in Algeria, though it is even more numerous in Marocco. From Constantine Mr. Jourdain proceeded to El Kantara, and, after taking eggs of *Falco peregrinus pelegrinoides* and meeting with *Rhamphocorys* in the extreme north of the El Outaya plain, he left for Chegga. Here *Œnanthe mœsta* had almost fledged young on March 28th. Returning northward to Algier, he visited the Forest of Ouarsenis, the birds of which district have been recently described by M. Heim de Balsac. The last nest of *Aquila chrysaëtos occidentalis* of the season was taken on the first day of his visit, but *Circaëtus* was not yet breeding, and the season for *Hieraaëtus fasciatus* was over. Five days were spent in this most interesting district, and most of the species recorded by M. de Balsac were identified. After a short but interesting run to Ain Sefra, where the bird-life proved to be much poorer than formerly, and south to Figuig, where sand-storms rendered work in the field almost impossible, he returned to Saida, and worked the scrub-covered country eastward for some days. At Tefrit flourishing colonies of *Corvus monedula* were met with—apparently the only place in Algeria where this species occurs, except the gorge at Constantine.

Before returning to Algiers a trip was made to Boghari, and the site of the colony of *Comatibis eremita* was visited, but the nests were deserted, and only *Neophron*, *Corvus corax tingitanus*, *Falco peregrinus*, *F. tinnunculus*, and *Buteo r. cirtensis* were found on the cliffs. In the valley of the Chelif, *Luscinia* and *Cettia* were settled in many places and evidently breeding, while flocks of *Loxia curvirostra* were met with in pine-woods near Orleansville.

Mr. Jourdain also referred to the local and sporadic distribution of the Corvidæ in North Africa, and hoped that it would soon be possible to map out the range of *Pica p. mauritanica* in Marocco and Algeria as M. Lavauden has already done in Tunisia.

Messrs. H. C. Robinson and N. B. Kinnear described the following new species of *Cyornis* :—

Cyornis poliogenys saturatior, subsp. nov.

A much darker bird than the typical race described by W. E. Brooks from the Sikkim Terai (Stray Feath. viii. 1879, p. 469) and differing in having the orange-buff of the breast carried up almost to the chin, so that there is no perceptible pale throat. Colour above browner, less greyish, the cap not differentiated from the rest of the upper parts. Edges of the tail-feathers and the greater upper tail-coverts rather more chestnut.

Wing (type) 70 mm.; 4 ♀, 68–73; 1 ♂, 74; 6 unsexed, 66–72.

Type in the British Museum. Adult female. Collected near Dibrughar, Upper Assam, on 2nd March, 1880, by J. R. Cripps. Brit. Mus. Reg. No. 86.4.1.4117. Hume Coll.

Specimens examined. Thirteen from the Miri and Naga Hills (*H. H. Godwin-Austen* and *A. W. Chennell*); Dibrughar, Upper Assam (*J. R. Cripps*).

Mr. H. C. Robinson, on behalf of Mr. C. B. Kloss and himself, exhibited specimens of three nominal species of the genus *Rhinomyias* Sharpe, and made the following remarks :—

I. Rhinomyias brunneatus (H. H. Slater).

Siphia brunneata, Slater, Ibis, 1897, pp. 175, 176; La Touche, Ibis, 1899, p. 422.

Only recorded from two localities in N.W. Fokien and Chekiang, China, from April onwards.

Wing (types): ♂ 81·5 mm.; ♀ 82·5. British Museum series: ♂ 78–82 mm.: mean 80·5, ♀ 79.

II. Rhinomyias nicobarica Richmond.

Proc. U.S. Nat. Mus. xxv. 1902, p. 295.

Dr. Abbott and Mr. C. B. Kloss obtained eleven specimens of this bird on Great and Little Nicobar Island between the end of February and March. Richmond gives the wing of his type as 77·5 mm., that of the bird exhibited, a not quite adult male, is 79.

III. Rhinomyias tardus Robinson & Kloss.

Journ. Fed. Malay States Mus. vi. 1915, p. 49; iid. *op. cit.* x. p. 192.

We have obtained in all six specimens of this form—three including the type from hills in Selangor and Negri Sembilan at a height of 1500–2300 feet in the month of September, and three from a screw-pile lighthouse in the middle of the Straits of Malacca, 15 miles from land, in November. The British Museum also contains one from Klang on the coast of Selangor, collected by W. Davison in March.

Wing: ♂ 79–83 mm.; ♀ 79·5.

Comparison of all these birds discloses no differences that can be regarded as even subspecific, and I think it must be admitted that we have a case of one form only in summer-quarters (S. China) and in winter-quarters, Malay Peninsula and Nicobars, which must be known under its earliest name, *Rhinomyias brunneata* (H. H. Slater).

The genus, which consists of several species, with head-quarters in Borneo and the Philippines, is an inhabitant of thick jungle, often at considerable elevations, and has not hitherto been recorded as migratory.

Messrs. H. C. Robinson and C. B. Kloss also exhibited and described the following race of *Cyornis* from Eastern Java:—

Cyornis banyumas limitans, subsp. nov.

Male. With the light tint on the forehead and superciliaries far less pronounced than in the typical form, rufous of the under surface paler, the middle of the belly white, under tail-coverts also pure white. Wing 75 mm. *Female.* Above

paler and greyer than the female of *C. b. banyumas*. Below lighter and more rufous, less rusty red. Middle of the abdomen and under tail-coverts white. Wing 71 mm.

Type. Adult male. Tamansari, East Java, 1400 feet. Collected on 15th April, 1916, by Federated Malay States Museum Collector.

Specimens examined. The type and another male from the same locality collected by C. B. Kloss on 15th January, 1920. A female from the type-locality and another from Badjoelmati, E. Java, also collected by C. B. Kloss, and a third female from the Ardjoeno Volcano, 3000 feet, E. Java, collected 12th January, 1896, by W. Doherty and now in the Tring Museum.

Mr. H. F. Witherby referred to Mr. H. W. Robinson's announcement of the breeding of the Firecrest (*Regulus ignicapillus*) in Lancashire in 'The Ibis,' October 1927, p. 732, and to his statement that the young just out of the nest had "a minute small [*sic*] lemon-coloured tuft on the crown." Mr. Witherby stated that he had examined six specimens in juvenile plumage (3 Tring Museum, 1 British Museum, and 2 in his own collection), and none of these had any trace of lemon-colour on the crown. He exhibited three specimens in support of his statement.

Mr. P. F. Bunyard exhibited a remarkable nest of the Chaffinch (*Fringilla cœlebs*) from Kent.

The nest was found by H. L. Stapley, of Ashford, Kent, in a white-thorn bush, and measured, depth 6 in., width 2½ in., circumference 17 in., diameter of cup 2 in., depth of cup 1½ in.

The wall or outside of the nest had the usual lichen and moss, which is interwoven and almost entirely encased with white cotton-wool; the cup was heavily lined with horse and other hair, and a few feathers.

The eggs were typical, and the birds carefully identified at the nest.

Mr. Bunyard also exhibited a very beautiful clutch of 5 eggs of the Spotted Flycatcher (*Muscicapa striata*) from Putney.

Ground-colour pale blue, resembling those of the Pied Flycatcher (*Ficedula hypoleuca*), one egg had a large suffused marking at the large end of reddish-grey, the remainder had sparingly distributed minute spots of the same colour.

Mr. Bunyard also exhibited a typical clutch for comparison.

Mr. C. Boden Kloss sent descriptions of new Oriental subspecies by Mr. F. N. Chasen and himself.

Cyanops asiatica chersonesus, subsp. nov.

Cyanops davisoni Robinson, Journ. Fed. Malay States Mus. v. 1915, p. 94 (Mountains of Bandon, Peninsular Siam); Robinson and Kloss, Journ. Nat. Hist. Soc. Siam, v. 1922, p. 162 (Mountains of Nakawn Sritamarat, Peninsular Siam).

Cyanops asiatica ? *incognita* Baker, Journ. Nat. Hist. Soc. Siam, iii. 1919, p. 429 (Mountains of Trang, Peninsular Siam).

Cyanops davisoni (*incognita*?), Robinson and Kloss, Journ. F.M.S. Mus. xi. 1923, p. 60 (Mountains of Nakawn Sritamarat, Peninsular Siam).

Like *C. a. davisoni* (Hume) of Central Tenasserim, but the red occipital patch much reduced in area; the blue band across the crown broader, paler, and greener blue with the black centres of the feathers less distinct; cheeks and throat paler blue.

Type in the British Museum. Adult female from Khao Luang, Nakawn Sritamarat, Peninsular Siam, 4500 feet. Collected by H. M. Pendlebury on 29th March, 1922. Wing 100 mm. Brit. Mus. Reg. No. 1927.11.15.1.

Six specimens examined and compared with examples of *C. a. davisoni* from the neighbourhood of Raheng, West Siam.

Obs. Cyanops incognita (Hume), in connection with which these birds have been discussed, has a black stripe below the eye; it is probably the north-western form of *C. oorti*, whereas *chersonesus* is the southern representative of *C. asiatica*.

Cyanoderma erythroptera rufa, subsp. nov.

Like *Cyanoderma erythroptera labuanensis* Coll. & Hart. (*C. bicolor* (Blyth) and auct.), but the chestnut of the upper parts much richer (Mahogany-red, *Ridgway*) and extending up the nape to the occiput. Compared with eighteen examples of *C. e. labuanensis* from North Borneo.

Type. Adult female from Sampit, south coast of Borneo, long. 113° E. Collected by Dr. Carl Lumholz on 24th June, 1914. "Iris red-brown, bill black, feet brown." Wing 62 mm. In the intensity of its colour and in having back and wings alike this specimen seems to resemble that obtained by Motley in the Banjermassin district of South Borneo (*Timalia* sp., Sclater, P. Z. S. 1863, p. 215).

Chlorocharis emiliæ moultoni, subsp. nov.

Like *C. e. emiliæ* Sharpe, of Mt. Kinabalu, North Borneo, but smaller in all dimensions. Superciliary stripes, sides of the head, fore-neck, and underparts much yellower; upper parts a brighter clearer green. The distinct broad supercilium and the yellow sides of the head, etc., conspicuously distinguish this bird from the typical form. Differences in size are as follows:—

	C. e. moultoni (13 spms.).	*C. e. emiliæ* (11 spms.).
Wing	62–65·5	67–72
Tail	47–51	53–60
Culmen	12–13	14–16

Type (in the Sarawak Museum). Adult male from Mt. Poi, South-western Sarawak, 5000 feet. Collected by E. Mjöberg on 6th October, 1923. Wing 65·5 mm.; exposed culmen 12·5.

We have compared examples of this new race from Mt. Poi (5000–5400 ft.), Mt. Murad (7000 ft.), and Mt. Temabo (Baram District), all in Sarawak, with topotypes of *C. e. emiliæ* taken on Kinabalu at altitudes up to 11,000 ft.

It is interesting that *C. e. emiliæ* should apparently be confined to the Kinabalu area, while the new form, so

markedly distinct, is found on both Mt. Murad and Mt. Poi; the former is only 150 miles south-west of Kinabalu, while Poi is another 400 miles distant in the same direction. But Kinabalu is the highest and, at the same time, the most isolated mountain in Borneo, while there is a more or less high-level connection between the rest.

Mr. G. M. Mathews forwarded the following:—

Rileyornis, gen. nov.

Differs from *Cyornis* Blyth in having a distinctly hooked bill.

Type, *Siphia hoevilli* Meyer.

NOTICES.

The next Meeting of the Club will be held on Wednesday, December 14, 1927, at PAGANI'S RESTAURANT, 42–48 Great Portland Street, W. 1. The Dinner at 7 p.m.

Members intending to dine are requested to inform the Hon. Secretary, Dr. G. Carmichael Low, 86 Brook Street, Grosvenor Square, W. 1.

Members are reminded that the Subscription for the Session, £1 1s. 0d., is now due. The Treasurer hopes that those not paying by banker's order will send him this without further notice.

Members who intend to make any communication at the next Meeting of the Club are requested to give notice beforehand to the Editor, Mr. N. B. Kinnear, at the Natural History Museum, South Kensington, S.W. 7, and to give him their MSS., for publication in the 'Bulletin,' not later than at the Meeting.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

No. CCCXIX.

The three-hundred-and-fourteenth Meeting of the Club was held at Pagani's Restaurant, 42–48 Great Portland Street, W. 1, on Wednesday, December 14, 1927.

Chairman: Dr. P. R. Lowe.

Members present:—W. Shore Baily; E. C. Stuart Baker; D. A. Bannerman; F. J. F. Barrington; A. L. Butler; Col. S. R. Clarke; Capt. H. L. Cochrane, R.N.; Major-Gen. Sir Percy Cox; A. H. Evans; A. Ezra; Major S. S. Flower; Rev. J. R. Hale; Dr. E. Hartert; R. E. Heath; Rev. F. C. R. Jourdain; N. B. Kinnear (*Editor*); Dr. G. Carmichael Low (*Hon. Sec. & Treas.*); Admiral H. Lynes; C. W. Mackworth-Praed; J. H. McNeile; Dr. P. H. Manson-Bahr; Col. R. Meinertzhagen; Mrs. Meinertzhagen; J. L. Chaworth Musters; C. Oldham; G. H. R. Pye-Smith; C. B. Rickett; H. C. Robinson; Lord Rothschild; W. L. Sclater; D. Seth-Smith; H. Stevens; W. G. Stuart-Menteth; C. G. Talbot-Ponsonby; Marquis of Tavistock; A. Landsborough Thomson; B. W. Tucker; H. Whistler; V. Williams; H. F. Witherby.

Guests present:—T. W. Adam; L. de Tibolth; M. Lavauden; H. Hughes Onslow; B. B. Osmaston; C. R. Wood.

Dr. G. Carmichael Low showed the foot of a Pink-footed Goose (*Anser brachyrhynchus*), which had been sent to him by Mr. Edward Valpy. The bird was recently shot on the Humber and presented a very abnormal condition of the web of the foot. This was entirely absent between the toes, with the exception of a slight thickening along the side of each toe down to the base of the nail, where the web naturally ends. There was no evidence of any traumatism to account for the condition, and one must conclude therefore that it was a congenital defect. There was no account of the other foot.

[Note.—Since writing the above, Mr. Valpy has kindly obtained the other foot, which is exactly the same as the one exhibited.]

Mr. W. L. Sclater exhibited some birds from southern Abyssinia recently obtained by Sir Geoffrey Archer, K.C.M.G., among which were two new Francolins:—

Last summer Sir Geoffrey Archer and H.H. the Maharao of Cutch made a shooting expedition into the mountainous region south of Addis-Ababa and the Hawash Valley and east of Lake Zwai and the chain of Lakes which form the upper end of the Rift Valley, and which is generally known as the Arussi Country. Owing to the unfortunate incident of the raiding of a caravan which they had sent to Berbera for fresh supplies by unruly Abyssinian soldiery, their stay was cut short, and Sir G. Archer did not obtain so many bird-skins as he had hoped. But, in addition to the two Francolins described below, he obtained a third Francolin, *Francolinus castaneicollis bottegi* (Salvadori, Ann. Mus. Civ. Genova, xxxviii. 1898, p. 652), first discovered by the Italian traveller, Bottego, which is new to the Natural History Museum, and also *Turacus leucotis donaldsoni* Sharpe and *Caprimulgus donaldsoni* Sharpe, both rare birds which have

been seldom met with since they were originally collected by Dr. Donaldson Smith.

Sir Geoffrey Archer has most generously presented these as well as the types of the new Francolins to the National Collection.

Francolinus coqui maharao, subsp. nov.

Description.—Nearest on the whole to *F. c. coqui*, which ranges from South Africa to eastern Kenya Colony, but with the crown a deeper reddish-brown, the back also of a richer shade and the longitudinal pale spear-marks larger and less frequent. Below narrowly barred transversely throughout from the breast to the under tail-coverts with black and pale fulvous, the barring much more regular and much finer than that of *F. c. coqui*, the outer edge of the primaries and their coverts washed with rufous.

From *F. c. hubbardi* of western Kenya Colony it differs in its barred underparts, as also from the mysterious *F. c. schlegeli* (see 'Ibis,' 1922, p. 109) and *F. c. buckleyi*.

Measurements.—Length about 566 mm.; wing 136; tail 85; tarsus 35; one sharp but not very long spur.

Type (and only example obtained) in the British Museum, a male from Dugata Sasabin, at 4000 ft., in the Arussi Galla country of Southern Abyssinia, collected by Sir Geoffrey Archer, K.C.M.G., on 28 June, 1927. Brit. Mus. Reg. No. 1927.12.13.1.

Francolinus africanus archeri, subsp. nov.

Description.—Closely resembling *F. a. lorti* of British Somaliland, but more darkly coloured above. The ground-colour of the feathers almost black; underparts with a distinct buffy tinge, not white or creamy as in *F. a. lorti*; also much smaller—wing 148 mm., against 167.

Type (and only example obtained) in the British Museum, a male from Mt. Daro, 7000 ft., east of Harrar, near the borders of British and Abyssinian Somaliland, collected by Sir Geoffrey Archer on 25 June, 1927. Brit. Mus. Reg. No. 1927.12.13.2.

Mr. N. B. Kinnear exhibited an adult female and an immature skin of the rare Magellanic Plover (*Pluvianellus sociabilis*), which was obtained by Mr. P. W. Reynolds in Tierra del Fuego in January 1927.

This bird was first discovered by Capt. P. P. King, of the 'Adventure,' in the Straits of Magellan between 1826–30, but it was not named till 1853, when a single example, brought home from the same locality by the naturalists on the 'Pôle Sud,' was described by Jacquinot and Pucheran. This specimen is now in the Paris Museum.

Since then Mr. John Young shot a single example at Tova Harbour, Patagonia, in 1888, which is now in Lord Rothschild's collection.

The above three specimens, so far as I know, are the only examples in Europe.

The coloration of the plate of this bird in 'Voyage au Pôle Sud,' Zool., Oiseaux, pl. xxx., is quite good, and except that the upper surface is rather too brown there is not much wrong with it. The same, however, cannot be said of the coloured figure in Seebohm's 'Geographical Distribution of the Charadriidæ,' which is far too dark and the eyes, legs, and feet quite the wrong tint. No doubt, this is due to the plate having been coloured from Capt. King's old specimen.

The following are the measurements of Mr. Reynolds's adult ♀ :—Wing 139 ; tarsus 21; bill from base of skull 22; tail 62 mm. Weight 3 oz. Iris carmine, but darker than foot ; tarsus and foot carmine ; bill black, a pinkish patch at the base of both mandibles.

The immature bird differs from the adult in the grey colour of the upperside being of a paler shade and having most of the feathers tipped with white, particularly on the head ; the scapulars and wing-coverts barred with the same and the breast streaked with pale grey. In the adult there is a broad band of greyish-brown feathers across the breast, but in the immature bird these feathers are white with pale grey centres, giving rather a streaked appearance.

Iris orange ; bill black, yellowish patches at base ; tarsus and feet dull yellow.

Nomenclature of *Perdix hodgsoniæ*.

In the 'Bulletin,' No. CCCVIII. (Nov. 1926), Professor Sushkin described a new form of Tibetan Partridge as *Perdix hodgsoniæ occidentalis*. Dr. C. B. Ticehurst pointed out to Prof. Sushkin, however, that the name was preoccupied, and accordingly the latter changed it to *Perdix hodgsoniæ nanshanicæ* in the October number (vol. xlviii. 1927, p. 27).

In the meanwhile, Dr. Albert Collin had noticed Prof. Sushkin's mistake, and in the 'Ornithologische Monatsbericht' for March 1927 (xxxv. p. 55) proposed to substitute the name *Perdix hodgsoniæ koslowi*, which, unfortunately, is the name the bird must now be known by.

A needless addition to synonymy might have been avoided if Dr. Collin had followed Dr. Ticehurst's example and, instead of rushing into print, drawn Prof. Sushkin's attention to the mistake. In this connection, we would draw Dr. Collin's attention to the Resolution under Article 34 of the International Rules of Zoological Nomenclature (*vide* Proc. Biol. Soc. Washington, xxxix. p. 86, July 30, 1926. —Ed.

Dr. P. R. Lowe exhibited a mounted example of a Red-necked Grebe, said to have been obtained at Aultbea, Ross-shire, in September 1925, and forwarded to the Museum for identification by Messrs. John Betteridge and Son of Birmingham. Dr. Lowe considered the bird to be an example of the American form, *Podiceps griseigena holbœllii* (Holbœll's Grebe), but before definitely adding it to the British list he wished to make further investigations, as the specimen is not altogether normal, and also to obtain additional particulars of its capture.

NOTICES.

The next Meeting of the Club will be held on Wednesday, January 11, 1928, at PAGANI'S RESTAURANT, 42–48 Great Portland Street, W. 1. The Dinner at 7 p.m.

Members intending to dine are requested to inform the Hon. Secretary, Dr. G. Carmichael Low, 86 Brook Street, Grosvenor Square, W. 1.

Members are reminded that the Subscription for the Session, £1 1s. 0d., is now due. The Treasurer hopes that those not paying by banker's order will send him this without further notice.

Members who intend to make any communication at the next Meeting of the Club are requested to give notice beforehand to the Editor, Mr. N. B. Kinnear, at the Natural History Museum, South Kensington, S.W. 7, and to give him their MSS., for publication in the 'Bulletin,' not later than at the Meeting.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

No. CCCXX.

The three-hundred-and-fifteenth Meeting of the Club was held at Pagani's Restaurant, 42–48 Great Portland Street, W. 1, on Wednesday, January 11, 1928.

Chairman: Dr. P. R. Lowe.

Members present:—W. Shore Baily; E. C. Stuart Baker; D. A. Bannerman; F. J. F. Barrington; Miss M. G. S. Best; Count A. Bobrinskoy; P. F. Bunyard; Capt. F. W. Dewhurst; Miss J. M. Ferrier; Major S. S. Flower; A. F. Griffith; Dr. E. Hartert; R. E. Heath; Mrs. T. E. Hodgkin; Rev. F. C. R. Jourdain; N. B. Kinnear (*Editor*); J. S. Lewis; N. S. Lucas; C. W. Mackworth-Praed; Lt.-Col. H. A. F. Magrath; Mrs. R. Meinertzhagen; J. L. Chaworth Musters; T. H. Newman; C. Oldham; G. H. R. Pye-Smith; C. B. Rickett; H. C. Robinson; W. L. Sclater; D. Seth-Smith; Major A. G. L. Sladen; H. Stevens; H. Whistler; H. F. Witherby.

Guests present:—M. A. C. Hinton; A. O. Smith; Baron L. de Tibolth.

Mr. N. B. KINNEAR exhibited a new species of Pigeon of the genus *Muscadivora* from Santo Island, New Hebrides, where it had been discovered by Mr. J. R. Baker :—

Muscadivora bakeri, sp. nov.

Head grey, darker on the occiput; lower neck and upper mantle dark maroon ; back, rump, and tail blackish-grey slightly glossed and similar in tint to the occiput ; wings blackish-grey with a slight grey bloom. Breast dark maroon, similar to the head, becoming lighter and redder towards the vent ; under tail-coverts bright chestnut ; underside of tail ashy-grey ; under wing-coverts rich chestnut and the underside of the flight-feathers bright chestnut.

Measurements :—Wing 230 mm. ; tail 162 ; tarsus 30 ; bill from base 32, from gape 33.

Type in the British Museum. ♂, Betap, Western Santo, New Hebrides, 3500 ft. Collected by J. R. Baker. Reg. No. 1927.12.26.1.

NOTE.—This Pigeon is quite unlike any other known species, and, though distinct from, appears to be nearest to *Muscadivora latrans* Peale of the Fiji Islands. From all the other members of the genus the new species differs in the colour of the under tail-coverts and underside of the tail.

Mr. Baker only brought back a single skin—the type. Two others were obtained by a native at about the same elevation and brought in to him, but, unfortunately, were plucked before he could prevent it.

Apparently this Pigeon is confined to high elevations on Western Santo, and, according to the natives, is unknown on the eastern part, which is mostly below 500 feet.

In addition, Mr. Baker brought back a few other skins, which include examples of *Lamprococcyx plagosus layardi* and *Nyroca australis* not hitherto recorded from the New Hebrides.

Mr. N. B. KINNEAR also communicated the following note :—

"Dr. Stresemann has kindly drawn my attention to the Ornith. Monatsber. for 1925, p. 21, wherein he records two

female specimens of *Pluvianellus sociabilis* in the Berlin Museum. These examples were obtained by Professor L. Plate in January 1895 at Punta Anegada in the Straits of Magellan."

Mr. H. C. Robinson exhibited and described the following race of Woodpecker :—

In Bull. B. O. C. xlvi. 1926, pp. 72–4, Mr. N. B. Kinnear dealt with the various races of *Blythipicus pyrrhotis* (Hodgs.) and described that from Annam, but, owing to lack of material, was unable to discriminate the bird from the mountains of the Malay Peninsula of which only a single, not very adult, male was then available.

As might be expected on geographical grounds, additional specimens show that the Malayan birds are distinct.

Blythipicus pyrrhotis cameroni, subsp. nov.

Nearest to *B. p. annamensis* Kinnear and equally dark beneath, but with a decided claret wash on the dark brown of the mantle, which is almost uniform. Scarlet of the neck only slightly indicated on the middle of the nape, not almost continuous as in *B. p. pyrrhotis*. Secondaries without the strong scarlet flush of that form. Dark bars on the primaries nearly as broad as the orange-brown interspaces, the black barring on the tail very even and much narrower than the orange interspaces. Size rather smaller than any of the other races.

Type :—Adult male. Gunong Mengkuang Lebah, Selangor, 4800 feet. March 1907. Federated Malay States Museum Coll.

Specimens examined :—The type and two rather less adult males from the main range of the Peninsula (Fraser's Hill, 4000 feet, and Gunong Batu Puteh, 3400 feet) and two adult females from Cameron's Highlands and the Seamangko Pass, 3500–4000 feet.

Dimensions :—*Males.* Wing 142, 141*, 137 ; tail 97, 89*, 96 ; tarsus 23, 23*, 22 ; bill from base of skull 45, 44·5*, 42 mm.

* Type.

Females. Wing 135, 136 ; tail 91, 92 ; tarsus 22, 23 ; bill from base of skull 40, 45 mm.

The race is named after the discoverer of the area in the main range between Perak and Pahang which is now being developed as a hill-station for the Malay Peninsula. It was first obtained in the vicinity of this district by Mr. L. Wray, I.S.O.

Mr. E. C. Stuart Baker described the following new subspecies of *Chalcophaps indica* :—

Chalcophaps indica robinsoni, subsp. nov.

This race is separable from the continental form by its smaller size and by the well-marked blue-grey streak down the back of the neck and the interscapulars. In the continental race the grey band sometimes passes as far down the neck, but in such cases it is ill-defined and broken, merging into the surrounding colours rather than contrasting with them as it does in the Ceylon bird.

Measurements :—Wing, ♂ 132 to 143 mm., ♀ 127 to 134, as against 152 to 161 and 148 to 156 respectively in *C. i. indica.*

Type in the British Museum, ♂. Cocawatte Estate, Ceylon. A. L. Butler Coll., 11th September, 1895. Registered No. 1916, 9.20.510.

Distribution :—Ceylon.

Material examined :—Eight from Ceylon and a large number from elsewhere.

Messrs. H. C. Robinson and E. C. Stuart Baker exhibited a series of Bustard-Quails (*Turnix*), naming three new subspecies and making the following remarks :—

Turnix suscitator.

The above name must be employed for the Bustard-Quail, formerly known as *Turnix pugnax* (Temm. Pig. et Gall. iii. pp. 612, 754, 1815) and more recently as *Turnix javanica* (Rafinesque, 1814). Many years earlier a bird had been described by Gmelin (Syst. Nat. i. p. 763, 1789) under the

name of *Tetrao suscitator**. Mr. Ogilvie-Grant, in vol. xxii. of the 'Catalogue of Birds of the British Museum,' quotes this name in his synonymy with a query, whilst he also uses queries to Brisson's "La Caille de Java" (Orn. i. p. 251, 1760) and Latham's "Noisy Quail" (Gen. Syn. ii. pt. ii. p. 787, 1783). Apparently he rejected the name *suscitator* on the grounds of insufficient description, but this appears to us to amply suffice for identification. It refers to a bird not larger than a dove, in general appearance very like the Common Quail and remarkable for its very loud booming call. The only other bird to which the description could possibly apply is the Japanese Quail, *Coturnix coturnix japonica* Temm. & Schleg., which, however, has never been recorded from Java, where, on the contrary, the Bustard-Quail is common. Both Brisson and Latham refer to the custom the natives of Java have of keeping this bird in small cages on account of their admiration for its booming call. This custom is still in force and for the same reason.

Turnix suscitator has been divided into several races, of which Baker accepted four as occurring within Indian limits when he wrote the "Game Birds of India" for the 'Journal of the Bombay Natural History Society.' He, however, then pointed out that in several areas, notably round about Calcutta and Pegu, there appeared to be forms which differed again very considerably from those occurring immediately around them. Further, Robinson, whilst working on the birds of Malaya, Siam, etc., came to the conclusion that the forms *Turnix rostrata* and *Turnix pugnax* (now *suscitator*) would have to be restricted to Formosa and Java respectively.

We have now re-examined the large material in the British Museum, supplemented by that brought home by Robinson from the Malay States and the islands, and we

* Gmelin and Latham include their bird in a section with four toes, which, of course, no member of the genus *Turnix* possesses. The original figure by Willoughby (Orn. 1678, p. 171, tab. xxviiii.), *Coturnix indica bontii*, on which all subsequent descriptions were more or less based, shows a bird with no hind toes.

agree that the following geographical races are sufficiently well differentiated to necessitate their separation :—

(1) Turnix suscitator suscitator Gmelin, Syst. Nat. i. p. 763, 1789.

This is a small dark form, the black of the upper parts not greatly, but the rufous highly, developed ; the underparts are very rufous, and there are distinct indications of a red collar on the neck and interscapulars of the female.

Measurements :—Wing, ♀ 81 to 90 mm., ♂ 79 to 85 (9 examined).

Type-locality :—Java.

Distribution :—Java, South-East Sumatra, and ?S.W. Sumatra.

(2) Turnix suscitator atrogularis Eyton, P. Z. S. 1839, p. 107.

Similar to *T. s. suscitator,* but distinctly duller, though almost as dark. Neither the black nor the rufous markings on the upper plumage are quite so distinct ; the pale buff on the wings paler and more extensive.

Measurements :—Wing, ♀ 84 to 91 mm., ♂ 75 to 86 (57).

Type-locality :—Malacca.

Distribution :—Northern Sumatra, Malay States north to, and including, Province Wellesley.

(3) **Turnix suscitator interrumpens**, subsp. nov.

In general appearance this race is very uniform in the colour of its upper plumage, having neither the rich red marking of *blakistoni* nor the velvety-black bars and marks of *T. s. suscitator* or *T. s. atrogularis.*

Measurements :—Wing, ♀ 81 to 90 mm., ♂ 73 to 87 (28).

Type in the British Museum. ♀, Kossoom, Peninsular Siam (*J. Darling*). Hume Coll. Reg. No. 89.5.10.316.

Distribution :—Peninsular Siam and Burma to E. Siam. Specimens from N.E. Siam are very grey, and with further material thence may have to be separated and named.

(4) **Turnix suscitator pallescens**, subsp. nov.

A much paler form ; the black and rufous markings on the upper plumage obsolete or much modified ; the white

markings broad and taking the shape of bars rather than streaks on the scapulars and inner coverts. The general tone is decidedly rufescent.

Measurements:—Wing, ♀ 80 to 88 mm., ♂ 80 to 83 (14).

Type in the British Museum. ♀, Thayetmyo, Burma, Hume Coll. Reg. No. 89.5.10.306.

Distribution:—A dry-zone bird, inhabiting roughly the low-rainfall area in Pegu, north to Thayetmyo and Tounghoo, but not apparently crossing the Sittoung river.

(5) Turnix suscitator rostrata Swinhoe, Ibis, 1865, p. 543.

A dark richly coloured form, but not possessing the broad rufous bars of *T. s. blakistoni* which it otherwise closely resembles.

Measurements:—Wing, ♀ 89 to 90 mm., ♂ 77 to 88 (13).

Type-locality:—Formosa.

Distribution:—Formosa.

(6) Turnix suscitator blakistoni Swinhoe, P. Z. S. 1871, p. 401.

The most richly coloured of all the races of Bustard-Quail, the upper parts beautifully blotched and streaked with velvety black and rich rufous-red, the latter colour in broad bars.

Measurements:—Wing, ♀ 88 to 94 mm., ♂ 78 to 82 (19).

Type-locality:—Canton, China.

Distribution:—South China from Fokhien, Tonkin, Annam, Northern Siam, Yunnan, Shan States, and Karennee.

(7) Turnix suscitator plumbipes Hodgs. Beng. Sport. Mag., May 1837, p. 346.

Similar to *blakistoni*, but not nearly so richly coloured; the rufous paler and in streaks rather than bars; the lower

parts not nearly so rufous. From *leggei* it differs in being much paler below and more black above—this is the darkest of all the races.

Measurements :—Wing, ♀ 82 to 98 mm., ♂ 77 to 90 (42).

Type-locality :—Nepal.

Distribution :—Chin and Kachin Hills, Bengal east of the Bay, North Arrakan, west to Sikkim, Nepal, the Bengal Dooars, and the wetter, more forested districts of Eastern and Northern Bengal to Bettiah in Bihar.

(8) **Turnix suscitator isabellinus**, subsp. nov.

A pale race, differentiated from all others by the very isabelline tint of the plumage of the upper parts; the white streaks are numerous but very narrow, the underparts a deeper rufous than in the other pale races.

Measurements :—Wing, ♀ 83 to 84 mm., ♂ 77 (3).

Type in the British Museum. ♀, Calcutta, 31 July, 1874. Hume Coll. Registered No. 89.5.10.389.

Distribution : 24 Parganas, Hoogly, and Nadia.

(9) Turnix suscitator taigoor Sykes, P. Z. S. 1832, p. 155.

General tint a pale bright rufescent; the pale fulvous edges to the feathers of the back, scapulars, etc., very broad and dominant; underparts pale rufous.

Measurements :—Wing, ♀ 77 to 88 mm., ♂ 72 to 85 (29).

Type-locality :—Deccan.

Distribution :—The whole of India south of the habitat of *T. s. plumbipes* and *T. s. isabellinus*.

(10) Turnix suscitator leggei Stuart Baker, Bull. B. O. C. xliii. p. 9, 1920.

Very close to *T. s. suscitator* from Java, but distinguished from that bird by the broad red collar of the female.

Measurements :—Wing, ♀ 81 to 88 mm., ♂ 76 to 81 (8).

Type-locality :—Ceylon.

Distribution :—Confined to Ceylon.

Mr. A. F. Griffith reported seeing an immature Shag at full tide on January 5th of this year swimming and diving immediately under the parapet of the Embankment, a third of the way from the Waterloo Bridge to the Charing Cross Bridge.

He also made some remarks on the Booth Museum at Brighton, where a large number of rare vagrants to Britain have now been collected, and recommended members to visit the museum when in that town.

Mr. H. C. Robinson read the following note on *Sula leucogaster* (Bodd.), based by observations by himself and Mr. N. B. Kinnear on the series in the British Museum :—

Note on *Sula leucogaster* (Bodd.).

By H. C. Robinson and N. B. Kinnear.

We have had occasion to examine the large series of this Booby in the British Museum, and have measured all the adult birds in the Collection. Mathews (Systema Avium Australas. 1927, p. 230) maintains three races :—

S. leucogaster leucogaster (Bodd.). Terra typica, Cayenne.

S. leucogaster plotus (Forster). Terra typica, New Caledonia.

S. leucogaster rogersi Mathews. Terra typica, Bedout Island, Mid-West Australia.

The latter race has apparently been resuscitated, though it at one time was withdrawn by the author. The sole diagnosis is "silvery grey eyes and pale blue feet." It is figured with blue feet, B. Austral. pl. 228, 1915, but in the description the feet are stated to be pale yellow.

Mathews and Iredale consider that the forms are insufficiently studied and that the only fact certain is that two subspecies can be admitted—viz., *S. l. leucogaster*, the Atlantic Ocean form, and *S. l. plotus* (Forster) from New Caledonia—for Australian birds, "which are larger than typical birds and with deeper brown coloration above." As regards coloration, this statement is at first sight true. All the specimens from the Atlantic have head and neck distinctly darker than

the rest of the upper surface, therein differing from birds from the Straits of Malacca, the Indo-Malayan Archipelago, and from tropical Eastern Australia and the Central Pacific, which are deep uniform brown. On the other hand, birds from Christmas Island and the neighbourhood of Formosa and the coast of Annam approach very closely in colour those from St. Paul's Rocks in the Central Atlantic, and have the legs and wings rather paler than the head and neck. As regards dimensions, Mathews's statements require some qualification. So far from Australian birds being larger than typical birds, the measurements given for *S. l. rogersi* (wing 374 mm., culmen 84) are smaller than those of the vast majority of the species that we have measured, that of the culmen being absolutely the smallest. The following being a summary [only fully adult birds in perfect plumage are included] :—

		Wings.		Culmen.	
		Range.	Mean.	Range.	Mean.
Atlantic Ocean ..	9 ♂	371–416	398·6	91–108	97·2
	7 ♀	393–423	408·7	93–116	102·7
Pacific Ocean....	6 ♂	387–407	394·8	93–98	95·7
	5 ♀	400–424	409·0	99–110	102·0
Indian Ocean....	5 ♂	363–400	381·6	90–95	92·3
	9 ♀	378–420	403·0	89–102	97·0

It will be seen, therefore, that, taken as a whole, there is little difference in size between the birds of the three Oceans, those from the Indian Ocean being the smallest and those from the Atlantic the biggest.

As with other birds of cosmopolitan range, in each area we find that the various breeding-colonies differ *inter se* in certain minor characters. In this particular case we have selected size as the only one that readily admits of quantitative expression, but intensive examination of large series would certainly reveal other differences. What is true of Oceanic birds is probably true also of certain sedentary land-birds, such as some of the Hemipodes, and we seem to have a case of strains developing within the area of what is conventionally recognized as a subspecies. How these should

be treated from a nomenclatural point of view, and to what extent their existence can be demonstrated, is an interesting subject for investigation and discussion.

Mr. Hugh Whistler forwarded the following description of a new subspecies of Skylark :—

Alauda arvensis ticehursti, subsp. nov.

Resembles *A. a. guillelmi* Witherby, but is even darker than that race and has more of a rusty-buff tinge in the plumage of the upper surface. The underparts are buffish with less white on them, and the gorget is more suffused with buff; the throat is more spotted and the spots composing the gorget are heavier. Bill shorter than in *guillelmi*.

Bill from skull, ♂ 15–16·75 mm., ♀ 15·5; wing, ♂ 106–114·5, ♀ 103·5. Nine males and one female from San Miguel de Oya (sea-level) and Santiago de Compostello (1800 feet).

Type in the British Museum. Adult ♂, No. 6877. San Miguel de Oya, near Vigo, W. Galicia, May 10, 1927. Collected by Hugh Whistler.

Observation :—The breeding-race of Galicia Province, N.W. Spain. Examination of a series of *A. a. sierræ*, *A. a. guillelmi*, and the new subspecies shows a regular gradation of colouring through the three races, *A. a. guillelmi* being really an intermediate between the other two.

Named after Dr. Claud B. Ticehurst, who helped to obtain the above series.

A topotype of *taiti* from near Lisbon has been examined, and, curious as it may seem, it is quite different to the Galician bird and is apparently the same as *sierræ*.

Mr. P. F. Bunyard exhibited a number of interesting water-colour drawings of birds etc. by Denham Jordan, which formerly belonged to Mr. J. King, many years head gardener at Oakdene, Holmwood, Surrey.

Jordan, who was a working naturalist, came from a village on the edge of the North Kent marshes and for many years lived in Dorking.

In collaboration with Mrs. J. A. Owen (Mrs. Owen Visger) he wrote several books on natural history under the pseudonym of "A Son of the Marshes" ('Bibliography of British Ornithology,' p. 320), and in the first of these ('Woodland, Moor, and Stream') there is mention of a picture of a dead Curlew which he had drawn on a slate.

I can find no reference to Jordan as an artist, though it is well known in Surrey that he frequently drew birds from Nature. The accompanying exhibits show that he had some artistic talent, though wanting in accuracy and colour-detail.

Mr. W. L. Sclater exhibited a photograph of the nest of the Social Weaver or Society-Bird (*Philetairus socius*) near Postmasburg, not far from Kimberley, in South Africa. These birds form communal nests in the old Kameeldorn trees formerly scattered about the open plains of Griqualand West and Bechuanaland. Since these have been cut down of recent years, the birds have taken to telegraph-poles on which to form their remarkable nests. A photograph of the old style of nest will be found in Stark and Sclater's 'Birds of South Africa,' vol. i. p. 117. The photograph exhibited was taken by Professor E. Kaiser, of Munich, and sent to Mr. Sclater by Miss M. Wilman, Curator of the Macgregor Museum at Kimberley.

Mr. Sclater also communicated the following note on the Bulbul, *Xenocichla xavieri*, Oustalet :—

Through the kind courtesy of Mr. J. Berlioz, I have been privileged to examine the type of *Xenocichla xavieri*, Oustalet ('Naturaliste,' 1892, p. 218 : Bangui, *i.e.* Ubanghi River, Belgian Congo), now in the Paris Museum. This bird, a female, was obtained by M. Jean Dybowski on 1 November, 1891, and has been mounted. It is therefore somewhat faded, and the feathers at the base of the bill are much worn, making the bill appear to be longer than it really is. With the assistance of Mr. T. Wells, I have compared it with our series of Green Bulbuls and we are quite satisfied that it is

identical with *Argaleocichla icterina icterina* (*Trichophorus icterinus* Bonaparte, Consp. Gen. Av. i. p. 262, 1850: Guinea), of which the Museum possesses a good series from various localities in West Africa from Liberia to Gaboon and eastwards along the northern Belgian Congo to the Upper White Nile.

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Members intending to dine are requested to inform the Hon. Secretary, Dr. G. Carmichael Low, 86 Brook Street, Grosvenor Square, W. 1.

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Members who intend to make any communication at the next Meeting of the Club are requested to give notice beforehand to the Editor, Mr. N. B. Kinnear, at the Natural History Museum, South Kensington, S.W. 7, and to give him their MSS., for publication in the 'Bulletin,' not later than at the Meeting.

The attention of Members is drawn to the fact that the March Meeting, which will be held on Wednesday, March 14, 1928, in conjunction with the British Ornithologists' Union, will be devoted principally to the exhibition of lantern-slides. The Hon. Secretary will be glad to hear from any Member who has slides to exhibit, in order that the necessary arrangements may be made.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

No. CCCXXI.

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Members present:—W. Shore Baily; E. C. Stuart Baker; D. A. Bannerman; F. J. F. Barrington; Miss M. G. S. Best; P. F. Bunyard; Hon. G. L. Charteris; Col. Stephenson R. Clarke; R. H. Deane; A. H. Evans; A. Ezra; Miss J. M. Ferrier; Dr. E. Hartert; R. E. Heath; Rev. F. C. R. Jourdain; N. B. Kinnear (*Editor*); Dr. G. Carmichael Low (*Hon. Sec. & Treas.*); N. S. Lucas; Admiral H. Lynes; C. W. Mackworth-Praed; Dr. P. H. Manson-Bahr; E. G. B. Meade-Waldo; D. W. Musselwhite; J. L. Chaworth Musters; T. H. Newman; C. Oldham; H. L. Popham; G. H. R. Pye-Smith; C. B. Rickett; H. C. Robinson; Lord Rothschild; W. L. Sclater; D. Seth-Smith; Major A. G. L. Sladen; B. W. Tucker; H. Whistler; H. F. Witherby.

Guests present:—Admiral Sir GEORGE HOPE; F. J. MUSSELWHITE; E. VALPY.

PODICEPS GRISEIGENA HOLBOELLII IN THE BRITISH ISLES.

The CHAIRMAN said that some members present might remember that at the meeting of the Club held last December he had exhibited an example of the American race of the Red-necked Grebe (*Podiceps griseigena holboellii*) which had been sent to the British Museum by Messrs. Betteridge, of Birmingham, for identification. This example was stated to have been shot at Aultbea in Ross-shire, but there was some uncertainty at the time as to who had obtained it and as to whether, for that reason, it could be accepted as a *bona fide* British record. Since then the Chairman had been in correspondence with Mr. J. MacGregor of Aultbea, who had shot the bird and who had sent him the following letter :—

Gruinard by Aultbea,
Ross-shire.
27th Jan., 1928.

P. R. LOWE, Esq.

DEAR SIR,—

I have just received your letter *re* Grebe. It was shot by me here about two years ago, but I don't remember the date; I suppose Mr. Betteridge can give you the date. I observed it in the Bay here for a few days before I shot it, and, although I examined it carefully with my telescope, I couldn't make it out; which made me keen to secure it for scientific purposes.

I have a fair knowledge of British birds myself, and I compared it with a Red-necked Grebe which I have set up, and I thought they were not the same specimens, and I am pleased to learn that experts are of the same opinion.

I will be glad if you will let me know what specimen it is. It was an expert diver, and seemed to get its food in a sandy bay here.

Yours faithfully,

JOHN MACGREGOR.

P.S.—It was actually killed in a wild state here.—J. MACG.

It was thus established that the bird had been taken within the British Isles, and the Chairman understood that the

record had now been accepted by the B. O. U. List Committee, who had seen the letter.

The following measurements of the specimen in question are appended:—

Bill: (*a*) Exposed culmen	55 mm.
(*b*) Depth at base	15 „
Tarso-metatarsus	64 „
Outer toe	80 „
Wing	200 „

Mr. D. Seth-Smith exhibited a case of gynandromorphism in a Gouldian Finch, *Poephila gouldiæ*. The bird, which had lived for some time in the aviary of Mr. S. Harvey, was skinned, after it died, at the Adelaide Museum, but, unfortunately, no note was taken of the sexual organs. The specimen shows on the left side the coloration of the female, while on the right it is that of the male, with a clear line of demarcation. Mr. Seth-Smith also mentioned he had seen a similar case in a Bullfinch, at a bird-show some years ago, in which one half of the bird was brown and the other half grey and rosy pink.

By the kindness of Mr. H. H. Riley and the authorities of the United States National Museum, Mr. H. C. Robinson exhibited a specimen of a recently-described Woodpecker, *Dinopium raveni*, from a small island off the N.E. coast of Borneo.

The bird is a member of the widely-spread form generally known as *Tiga javanense*, ranging from the Himalayas to French Indo-China and the Indo-Malayan Islands. Apart from differences in coloration, the form is interesting as showing a reduction in wing-length, more especially in the relative proportion of the primaries and secondaries, in accordance with its insular habitat. The islands on which it is found are small and low, mainly of coral formation and probably of extremely recent origin. They are situated on the Bornean shelf, from which they are separated by quite shallow water, so that the "species" must be one in an early stage of differentiation.

Birds from Labuan are beginning to show the same differences from the mainland Bornean form, but in these the variation is not nearly so far advanced.

Mr. H. C. Robinson forwarded the description of a new race of Weaver-Finch :—

Chlorura hyperythra malayana, subsp. nov.

Nearest to *Ch. h. borneensis*, Sharpe, from Kinabalu, but the tawny under surface much richer in tone and the green on the flanks more restricted. Lores deep chestnut. Frontal plumes blackish, forehead very slightly tinged with blue. Colour above dull grass-green, the rump only very slightly more bronzy than the back. Iris brown, bill black, feet yellowish brown.

Type in the British Museum, adult female. Collected at Telôm (Camerons Highlands), 3500′. Perak–Pahang boundary, Malay Peninsula, on January 22nd, 1902, by H. C. Robinson. British Museum Registered No. 1905. 2.1.267.

Species of the genus *Chlorura* are everywhere extremely rare, and this fairly distinct Malayan race has never been recovered since the original specimen was collected, though searched for repeatedly in the type-locality. As with the Bornean and Javan races, this bird was met with among tall bamboos.

Mr. H. C. Robinson also sent the following communication :—

By a *lapsus calami* I associated the name of Mr. C. B. Kloss with the description of a new race of *Cyornis* and with some remarks on *Rhinomyias* on pp. 43–45 of this volume. I should be regarded as solely responsible for the same.

Messrs. F. N. Chasen and C. Boden Kloss communicated the following description of a new race of *Cyornis* from S.E. Indo-China :—

Cyornis rufigastra indochina, subsp. nov.

Female like ♀ *sumatrensis*, but without blue on the crown and mantle, which are greyish-olive to bluish-olive—blue when present on the upper parts being restricted to the tail and perhaps faintly showing on the rump. The type from Annam, with greyish-olive upper parts, has only a very faint tinge of blue in the tail, as has a ♀ from Raheng, Siam; another ♀ from Raheng and others from E. and S.W. Siam have the tail blue as in *sumatrensis*. Birds from Hat Sanuk, S.W. Siam, are nearest to *sumatrensis*.

Male scarcely perceptibly paler blue above than *sumatrensis*. We have examined specimens of this new form from Daban, S. Annam; Lat Bua Kao, E. Siam; Hat Sanuk, S.W. Siam; Raheng, W. Siam; and Koh Klum Island, S.E. Siam; but have seen no females from the area between Hat Sanuk and Trang, Peninsular Siam, a gap of 300 miles. An exact division between the ranges of *indochina* and *sumatrensis* is therefore not possible, but it is probably about 10° N. lat.

Type. Adult ♀ from Daban, S. Annam. Collected by C. Boden Kloss on 22nd March, 1918.

Wings, 11 ♂ 66–72 mm., 7 ♀ 65–68 (type 65).

[We should like to add that in May last we had completed an account of the forms of *Cyornis* found in India, Indo-China, and Malaysia, which we refrained from offering to 'Ibis' for publication until we had incorporated in it the results of our June–September visit to North Borneo. Learning, however, that Messrs. H. C. Robinson and N. B. Kinnear have also been engaged on a revision of the genus, we have withdrawn our paper.]

Lord Rothschild exhibited a pure white example of the Red-necked Grebe, *Podiceps griseigena griseigena* (Bodd.). The bird was sent to Mr. H. F. Witherby by Mr. B. A. Pye, and had been shot at Cleethorpes, Lincolnshire, by the professional gunner, R. White, December 29, 1927. The bird is pure white with the exception of a slight yellowish wash at the base of the neck. Iris pale rose-colour; feet

orange-yellow; bill (in skin) bright yellow with dusky splashes on basal half. Lord Rothschild said that Mr. Witherby, when writing about the bird to him, considered it to be a Great Crested Grebe, *Podiceps cristatus cristatus* (Linn.), but Dr. Hartert and he himself had very carefully measured the bird and compared it with winter examples of both *P. cristatus* and *griseigena*, and they were both convinced it was an albino of *P. griseigena griseigena*. He also drew attention to the unusual and extreme silkiness of the plumage, especially of the breast.

Dr. G. Carmichael Low made some remarks on uncommon birds recently seen in London and its vicinity. At the present time, he said, there was a Gadwall drake (*Anas strepera*) on the Long Water, the upper part of the Serpentine, and also an Australian Black Duck (*Anas superciliosa*) at the lower end. The Gadwall had been about for several years now, the Australian Duck for one year. The latter must, of course, have escaped from captivity. It appeared to be mated with a Mallard Duck and stayed very much about the same place, hardly ever moving away from there.

On January 29 last, on the long reservoir at Barnes, the one that runs parallel with the river, opposite Duke's Meadows, there were over 100 tufted Duck, a few Pochards and Widgeon, a Great Crested Grebe and two lots of Smews, a drake in full plumage and three ducks, and another drake with two ducks.

On the same day at Penn ponds in Richmond Park there were eight Goosanders, *Mergus merganser*, on the big pond, which after being put up separated, three going away and five going down to the small pond. On following these, another two were seen on the small pond, an adult male in full plumage and another female, this making ten in all. Some of the females were fishing on the small pond and repeatedly came up with fish six or seven inches long, showing how destructive these birds may be. Several Black-headed Gulls hovering round attempted to rob the birds of their fish, but did not succeed.

As regards rare birds previously observed in Kensington Gardens and Hyde Park, he had seen a Common Sandpiper, *Tringa hypoleucos*, in the Round Pond when this was being cleaned out, April 16, 1923; with Mr. Oldham, a Great Crested Grebe on the Round Pond, April 8, 1927, a Little Grebe, *Podiceps ruficollis*, on the Round Pond, May 4, 1927, and two Scaup-Duck, *Nyroca marila*, July 23, 1926.

Mr. D. W. Musselwhite made the following remarks on Mr. Bunyard's observations on the Cuckoo for 1927 :—

At the October meeting of the Club Mr. P. F. Bunyard described the actions of a Cuckoo at Cliffe-at-Hoo, which convinced him that the bird deposited its egg in a Reed-Warbler's nest after regurgitation. Many, including myself, did not think his evidence was nearly strong enough, and I said so at the time. To-day I am even more convinced that Mr. Bunyard has not proved his case, and I think it only right I should give you my reasons.

First of all, let me say that Mr. G. J. Scholey, who was present at the meeting in October, and Mr. Bunyard have been co-operating in this work at Cliffe-at-Hoo, and together have had this individual Cuckoo under observation for the past three seasons, 1925/6/7. At the above meeting Mr. Bunyard exhibited a series of forty-seven eggs laid by this bird, including sixteen laid in 1925, which made it obvious that the bird watched in 1925 was the same as that observed in 1927.

Mr. Bunyard in the 'Bulletin,' p. 32, states that he "saw absolutely nothing to support the theory of normal oviposition, which has no scientific data to support it, is economically unsound, and physically impossible." I regard this as a most remarkable statement, and it is all the more so since Mr. Scholey in watching the same bird has evidently seen it many times lay its eggs in the usual way in the nests of Reed-Warblers.

In the 'Country Side' for July 1925 Mr. Scholey writes as follows :—

The present season just concluded found another reed-warbler cuckoo upon the same territory. She laid sixteen eggs on alternate days from May 31st to June 30th inclusive. Unlike her predecessor this bird, instead of dropping into marsh grass for half an hour or so prior to depositing, would fly to the tall hawthorn nearest the nest about to be used, where she would sit sometimes right over the nest for a corresponding period exactly as her predecessor did in the grass. She would fly direct to the nest from the hawthorn, which, of course, she had located some days beforehand, deposit her egg and away in from five to ten seconds. Further, the reed-warblers' nests used by this bird were never tilted sideways, and observations at close quarters (eight feet) *proved beyond doubt that she sat upon these nests and laid her egg in a normal manner.* Now, had this bird deposited otherwise, when did she lay her egg and pick it up when I had her under observation for half an hour previously?

Mr. Bunyard seems to have overlooked this note, since at the end of his report he says "that he would like to support the various statements made by Mr. G. J. Scholey from time to time in the Press and which he had ample opportunity of verifying." I think, therefore, that some explanation is necessary, as evidently Mr. Bunyard's observations in 1927 do not coincide with those made by Mr. Scholey on the same Cuckoo two years earlier.

With regard to this Cuckoo's actions when it was alleged to have regurgitated its egg, Mr. Bunyard has admitted that the bird had its back to him and the wings were limp and drooping.

As the body and partly spread wings of a Cuckoo would span about three Reed-Warblers' nests, I think it will at once be seen how speculative a definite statement would be as to how the egg was deposited, especially as the whole procedure did not occupy more than eight seconds. There is no doubt that, as the bird had its back to the hide, the observer was at a great disadvantage.

NOTICES.

Combined B. O. U. and B. O. C. Dinner.

The next Meeting of the Club will be held on Wednesday, March 14, 1928, at PAGANI'S RESTAURANT, 42–48 Great Portland Street, W. 1. The Dinner at 7 p.m. Members are reminded that this Dinner is held conjointly with the Annual Dinner of the B. O. U., and that they are allowed to bring Lady Guests.

The Meeting will be devoted to the exhibition of Lantern Slides of various Ornithological subjects.

Members of the B. O. C. intending to dine should inform the Hon. Secretary, Dr. G. Carmichael Low, 86 Brook Street, Grosvenor Square, W. 1., and not the Secretary of the Union. This notice is necessary in order that the seating may be arranged beforehand, and failure to let the Secretary know may result in no seat being available.

The programme for the Meeting is not yet complete, and the Secretary will be pleased to hear from any Members who would like to exhibit slides.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

No. CCCXXII.

The three-hundred-and-seventeenth Meeting of the Club was held at Pagani's Restaurant, 42–48 Great Portland Street, W. 1, on Wednesday, March 14, 1928, in conjunction with the Annual Dinner of the British Ornithologists' Union.

Mr. W. L. Sclater, the President of the B. O. U., took the Chair during the Dinner; and Dr. P. R. Lowe during the subsequent proceedings.

Members of the B. O. C. present:—W. Shore Baily; E. C. Stuart Baker; D. A. Bannerman; F. J. F. Barrington; Miss M. G. S. Best; H. B. Booth; A. W. Boyd; G. Brown; P. F. Bunyard; A. L. Butler; Hon. G. L. Charteris; Col. S. R. Clarke; Capt. H. L. Cochrane, R.N.; N. B. Coltart; Sir Percy Cox; R. H. Deane; A. Ezra; Miss J. M. Ferrier; J. M. Fleming; Major S. S. Flower; W. E. Glegg; A. F. Griffith; S. H. Hart; Dr. E. Hartert; R. E. Heath; Mrs. T. E. Hodgkin; Rev. F. C. R. Jourdain; N. B. Kinnear (*Editor*); G. C. Lambert; Dr. G. Carmichael Low (*Hon. Sec. & Treas.*); Dr. P. R. Lowe (*Chairman*);

N. S. Lucas; Admiral H. Lynes; J. H. McNeile; C. W. Mackworth-Praed; Lt.-Col. H. A. F. Magrath; G. M. Mathews; J. L. C. Musters; C. Oldham; B. B. Osmaston; C. E. Pearson; H. L. Popham; G. H. R. Pye-Smith; B. B. Riviere; H. C. Robinson; Lord Rothschild; W. L. Sclater; D. Seth-Smith; Major A. G. L. Sladen; Col. R. Sparrow; Capt. H. S. Stokes; W. J. Stuart-Menteth; C. G. Talbot-Ponsonby; The Marquis of Tavistock; A. L. Thomson; B. W. Tucker; Miss E. L. Turner; H. Whistler; V. Williams; H. F. Witherby; C. de Worms.

Members of the B. O. U. present:—C. E. Baker; Miss Barclay-Smith; K. J. A. Davis; H. J. S. Douglas; J. S. Dyson; F. H. Edmondson; Lord Hyde; Miss Knobel; Mrs. F. E. Lemon; Mrs. A. H. Murton; K. J. Orton; Lt.-Col. A. L. Owen; Lt.-Col. W. A. Payn; A. N. T. Rankin; F. R. P. Stringer; Mrs. Rose Haig Thomas; I. M. Thomson; Capt. L. R. Waud; T. Wells; Capt. J. A. C. Whitaker.

Guests present:—Mrs. Raymond Asquith; Mrs. Shore Baily; Miss Shore Baily; Mrs. C. E. Baker; Mrs. E. C. Stuart Baker; Miss Baker; Mrs. D. A. Bannerman; Mrs. P. F. Bunyard; Miss Bunyard; H. H. Gordon Clark; Lady Percy Cox; Mr. Ferrier; Miss Ferrier; Mrs. Flower; Mrs. Glegg; Mrs. A. L. Godman; Mrs. Hartert; Mrs. R. E. Heath; E. Hindle; Mrs. E. Hindle; Miss M. Hodgkin; Dr. Howard; Mrs. G. Carmichael Low; Mrs. Lucas; Miss Lynes; A. J. MacClymont; Mrs. Mackworth-Praed; D. H. Meares; F. Pike; R. E. M. Pilcher; Mrs. W. L. Sclater; Mrs. D. Seth-Smith; Rev. C. Squire; Mrs. Stringer; The Marchioness of Tavistock; Mrs. Whistler; Mrs. Witherby; F. J. Weydelin; and nine others.

The Annual Dinner of the B. O. U., held in conjunction with the B. O. C., was smaller than last year, 128 members of the Union, Club, and their guests attending, as against 144 in 1927.

Mr. Ian M. Thomson began the evening by exhibiting a series of very good slides of the nests etc. of the Bittern, Water-Rail, Montague's Harrier, and Bearded Tit.

Before showing his photographs Mr. Thomson read a few notes on the habits of the Bittern made during the past two seasons :—

"It was in June 1923 that I first heard and saw a Bittern. One night after dinner we heard a curious booming note, which I suggested might be a Bittern. We at once set out in the direction of the sound, and calling in on a farmer on the way were informed that it was the boom of the Bittern we had heard.

"On reaching a large stretch of water surrounded by reed-beds we again heard the boom several times. It sounded ventriloquial, but that may have been because the mere was surrounded by rising ground, as I do not remember noticing that in flatter country elsewhere.

"Not knowing anything about the habits of the Bittern, except what we had read, we were unable to find the nest or young, and only saw the old bird flying from the feeding-ground to where we imagined the young were.

"Later, on July 11, I was fortunate enough to be shown a young Bittern in another locality. This young bird was about a fortnight or three weeks old, and I imagine must have been the last to hatch from a very late nest.

"In March 1927, a good friend of mine informed me he had found a Bittern which had just begun to sit on five eggs. After leaving the bird for a fortnight a hide was built close to the nest, and five days later I began to take photographs. As I left the nest on that day I found that one egg was chipped, and expected to see the first chick hatched by the next day, but it was not till the following that it emerged. I noticed that each of the chicks took forty-eight hours to hatch after the egg first started to chip.

"Fortunately there were more or less still periods during the time I was waiting by the nest. More than once I heard the female bird stealthily approach the nest, and could always hear her trampling down the reeds as she drew near.

At first she was rather shy, but later, until the young were a fair size, she became much less timid.

"I had hoped to find out if possible whether the male bird visited the sitting female, but was unable to do so.

"I should mention that one day when in the hide, and the female Bittern was on the nest in a half-asleep condition, I heard a trampling sound among the reeds, which resembled the noise made by the sitting bird when returning to the nest.

"As this noise drew nearer the female appeared to become interested and to behave as most sitting females do when the male approaches. The trampling came close, then stopped, and I imagined I could see a Bittern in the reeds. Quite an interval elapsed, and then the sound of the trampling began to go away, and almost immediately I heard the intake of air preparatory to the boom of the male Bittern. Four times the bird boomed, and then once again after it had gone further away."

Mr. Seton Gordon showed an instructive series of films of various birds, including the Golden Eagle, Curlew, Dunlin, and Blackcock. That of the Curlew calling its young on to the nest was particularly pleasing, but the most interesting was the unique film of the Blackcock displaying. Mr. Seton Gordon was careful to explain that this display, which usually takes place in March, was not a nuptial display. Two or three cocks were shown on their chosen ground, and, though excellent as far as it went, the pictures suffered from having been cut and pieced together, and in consequence the antics of the birds could not be followed to their conclusion. The birds appeared to run about rather aimlessly, and showed little inclination to fight.

Mr. Seton Gordon told the audience that when the first rays of the sun fell upon the displaying ground the birds immediately forgot the presence of others and commenced feeding quietly.

The Rev. F. C. R. Jourdain exhibited a series of slides from photographs taken in Algeria, showing the type of country inhabited by Bonelli's Eagle, the Bald-headed Ibis,

the Waldrapp (*Comatibis eremita*), and various other North African birds. Mr. Jourdain accompanied his slides with a most entertaining discourse on his travels in that land, and his listeners showed their appreciation of this type of exhibit and Mr. Jourdain's witty remarks in no uncertain fashion, although in no single case was an actual bird shown on the screen.

Mr. Shore Baily's exhibition consisted of slides of four different species of Eagle-Owl, taken in his own aviaries.

The evening was brought to a close by Mr. E. C. Stuart Baker showing a charming series of coloured slides illustrating the nesting-places of a large number of Indian birds.

The standard of the exhibits was a very high one, and the large meeting showed its appreciation by hearty applause from time to time.

Mr. Gregory M. Mathews sent the following :—

Sipodotus, gen. nov.

Differs from *Todopsis* Bonap. in having a thinner and narrower bill and distinctly different coloration. Sexes alike in colour, whereas in *Todopsis* they differ. Type, *Todopsis wallacei* Gray.

Hylochelidon nigricans papua, subsp. nov.

Differs from *H. n. timoriensis* (Sharpe) in being larger, the flanks more fulvous, and in having the upper parts distinctly more glossy. Wing 107 mm.

Type in the British Museum. ♂. Kei Islands, Moluccas, 15 July, 1909. Collected by W. Stalker. Brit. Mus. Reg. 1910, 12.28.170.

Distribution. New Guinea and Kei Islands.

Dr. Ernst Hartert sent the following description of a new Green Pigeon :—

Sphenocercus sphenurus oblitus, subsp. nov.

In Nov. Zool. 1910, p. 193, I mentioned a single female from Hainan as *Sphenocercus sororius*, subsp. nov. ?, and ever

since I have not attempted to name it, as no more specimens from Hainan have come to us, nor did we have the nearest allies from the Continent. As the latter are now available in the British Museum, and all known forms are quite different, I name the Hainan form as above.

S. s. oblitus differs from *S. s. sororius* of Formosa by much smaller size and the greater extent of the green colour on the underside. It seems to be nearest to *S. s. annamensis* and is of about the same size, but is of a much brighter green, and yellower on the breast, head, rump, and upper tail-coverts. It is also near *robinsoni*, but underneath much brighter and yellower, also on the crown, tail, and upper tail-coverts. Wing 168 mm.

Type in the Tring Museum : ♀ ad. Mt. Wuchi, Hainan, 5. iv. 1903. Collected by Katsumata.

Mr. N. B. Kinnear communicated the following :—

In his 'Systema Australasianarum,' Mr. Mathews gives the distribution of *Hypocharmosyna placentis placentis* as "New Guinea (Fly River to the West Coast)," although Salvadori had recorded specimens in the Catalogue of Birds from Amboina, Ceram, Gilolo, and Batchian.

Hypocharmosyna placentis was originally described from Utanata River in Dutch New Guinea, and the examples collected by the B. O. U. Expedition on the Mimika River may be considered as typical.

On comparing specimens from Batchian and Gilolo with these birds, I find that the former are larger, darker green above and below in both sexes, and, in addition, the blue ear-coverts in the male are of a deeper tint. For these birds I propose the name :—

Hypocharmosyna placentis intensior, subsp. nov.

Type in the British Museum. ♂. Batchian. Collected by A. R. Wallace. British Museum Reg. No. 73.5.12.1517.

Specimens from Ceram and Amboina, though not quite so dark, are nearer the new form than *H. p. placentis*.

Measurements of wings :—

Dutch New Guinea : 5 ♂ 83–88 mm. (one 94), 3 ♀ 85–89 mm.

Batchian and Gilolo : 3 ♂ 91–97 mm., 4 ♀ 91–97 mm.

Ceram : 3 ♂ 88–90 mm., 4 ♀ 83–91 mm.

Amboina : 1 ♀ 91 mm.

NOTICES.

The next Meeting of the Club will be held on Wednesday, April 11, 1928, at PAGANI'S RESTAURANT, 42–48 Great Portland Street, W. 1. The Dinner at 7 p.m.

Members intending to dine are requested to inform the Hon. Secretary, Dr. G. Carmichael Low, 86 Brook Street, Grosvenor Square, W. 1.

Members who intend to make any communication at the next Meeting of the Club are requested to give notice beforehand to the Editor, Mr. N. B. Kinnear, at the Natural History Museum, South Kensington, S.W. 7, and to give him their MSS. for publication in the 'Bulletin,' not later than at the Meeting.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

No. CCCXXIII.

The three-hundred-and-eighteenth Meeting of the Club was held at Pagani's Restaurant, 42–48 Great Portland Street, W. 1, on Wednesday, April 11, 1928.

Chairman: Major S. S. Flower.

Members present:—E. C. Stuart Baker; F. J. F. Barrington; Miss M. G. S. Best; G. Brown; Sir Percy Cox; A. F. Griffith; Rev. J. R. Hale; B. Guy Harrison; Dr. E. Hartert; R. E. Heath; H. Hughes-Onslow; N. B. Kinnear (*Editor*); N. S. Lucas; C. Mackworth-Praed; Capt. W. E. F. Macmillan; Dr. P. H. Manson-Bahr; G. H. R. Pye-Smith; D. W. Musselwhite; C. B. Rickett; H. C. Robinson; Lord Rothschild; D. Seth-Smith; H. Stevens; Marquess of Tavistock; H. F. Witherby.

Guest:—F. T. Davies Goodson.

Description of a new Cassowary by Lord Rothschild, F.R.S.:—

Casuarius rogersi, sp. nov.

This species belongs to the "Mouruk" (*C. bennetti*) section of the genus—*i. e.*, it has a casque depressed posteriorly and no wattles. It is a fairly young bird, having a considerable amount of brown mixed in the plumage of the hinder half of the body.

Naked skin of head and neck very heavily wrinkled bright flesh-pink, darker between the wrinkles; lower sides of neck deeper rose-pink. This is the first Cassowary which has the head and neck practically unicolorous. At the base of the casque on the occiput the flesh-colour is more whitish.

Bought alive from Mr. Rogers of Liverpool; no indicated locality, but probably from one of the more isolated coastal ranges east of Geelvink Bay.

The type is at present living in the Zoological Society's Gardens, London.

Lord Rothschild further exhibited a new *Otidiphaps* (Ground-Pigeon), which he described as follows:—

Otidiphaps nobilis aruensis, subsp. nov.

Agrees in the colour of the upperside with *O. nobilis nobilis*, except that the patch on the nape is not bronzy-green, but white with a grey tinge, while the underside is only purplish on the lower abdomen, getting greenish towards the jugulum, which is dark metallic green with a steel-blue tinge. It thus resembles underneath more *O. n. cervicalis*, which is there greenish with a purple sheen on the lower throat. Above it differs from *O. n. cervicalis* in having the rump and upper tail-coverts purplish instead of greenish, and the nape-patch is not light grey, but almost pure white. One adult specimen, said to be a male. Wing 192 mm.; tail 197; metatarsus 67.

Type in the Tring Museum.

Hab. Aru Islands, where it was obtained by W. J. C. Frost in June 1914.

Dr. Ernst Hartert exhibited a new subspecies of *Pachycephala* from Java, which he described as follows:—

Pachycephala pectoralis javana, subsp. nov.

This Pachycephala of the *melanura-pectoralis*-group is outwardly nearest to *P. p. fulviventris* Hart. from Sumba, the underside of the male being yellowish-brown nearly all

over, except on the vent and under tail-coverts which are yellow, but it is not so deep fulvous as *fulviventris*, and the white throat-patch is more extended. The back and outer edges of the wing-feathers are slightly more greenish, the feet and legs are less strong. Its geographically apparently nearest ally, *P. p. fulvotincta* Wall., from Alor, Pantar, Lomblen, Flores, and Sumbawa is underneath yellow, and has only a fulvous-yellow band across the chest; it will probably also be found on Lombok. Both Doherty and Stresemann got one juvenile on Bali ; whether they belong to *javana* or to *fulvotincta* I could not say, but, judging from our one adult female from Java, which is more yellowish on the abdomen than those of *fulvotincta*, and a young male which is slightly striped on the breast and darker on the abdomen, it seems to belong to *fulvotincta*—which would be peculiar.

Wing of *P. p. javana*, ♂ 83–84, ♀ ad. 81 mm.

Type in the Tring Museum. Mt. Ardjuno, East Java, 8. xii. 1927.

Hab. Java. Mr. Menden sent six males, 1 female, and 1 ♂ juv., from Mt. Ardjuno. Mr. Robinson had also, some time ago, collected specimens on Java.

It is interesting that a subspecies of this group extends its habitat so far westwards.

Lord Rothschild kindly brought up from Tring a series of birds as illustrations of the recent discussion (B. O. C. cccxxi., Feb. 8) on hermaphrodite and gynandromorphic birds, and also the assumption of ♂ plumage by ♀ ♀ and ♀ plumage by ♂ ♂ :—

A bipartite ♀ Bullfinch (*Pyrrhula pyrrhula pyrrhula*) from Russia.

An hermaphrodite Reeves' Pheasant (*Syrmaticus reevesi*) which had a spur on one leg, a complete mixture of plumage, and an elongated tail, though of female coloration.

A ditto ♀ assuming ♂ plumage, and normal ♂ and ♀ for comparison.

A series of 5 ♀ ♀ Common Pheasants assuming ♂ plumage; the two in complete ♂ garb, however, lacking the dark tips to the feathers of the flanks and underside.

A series of 3 ♂ ♂ Common Pheasants assuming ♀ plumage.

(In both these series the change is due to disease of, or injury to, the genital organs.)

Two ♀ ♀ Golden Pheasants (*Chrysolophus pictus*) in almost complete ♂ plumage, and normal ♂ and ♀ Golden Pheasant for comparison.

A ♀ Amherst Pheasant (*Chrysolophus amherstiæ*) assuming ♂ plumage, and normal ♂ and ♀ for comparison.

(In both Golden and Amherst hens in ♂ plumage there is always present a crimson bar behind the black transverse bar on the feathers of the collar which is *never* found in normal ♂ ♂.)

A series of ♀ ♀ in various degrees of assuming ♂ plumage of Capercaillie (*Tetrao urogallus*) with normal ♂ and ♀ for comparison.

A series of 3 ♀ ♀ Black Grouse (*Lyrurus tetrix*) assuming ♂ plumage and 1 very old ♂ assuming ♀ plumage, with normal ♂ and ♀ for comparison.

♂ ♀ ♀ Black Grouse × Capercaillie (= Rackelhahn, *Tetrao medius* auct.), to show differences from ♀ ♀ in ♂ plumage.

The late Dr. A. B. Meyer has figured in his "Unser Auer-, Rackel- und Birkwild" the ♀ Capercaillie in ♂ plumage as the hybrid Capercaillie ♂ × Black Grouse ♀ and the Rackelhahn as the hybrid Black Grouse ♂ × Capercaillie ♀. The facts are that the hybrid Capercaillie ♂ × Black Grouse ♀ has not been found. In all recorded Black Grouse × Capercaillie hybrids the Black Grouse was the ♂ parent.

Mr. A. F. Griffith exhibited a Collared Pratincole (*Glareola pratincola*) in its original rough case in which it was mounted by W. C. Unwin, the Lewes bird-stuffer. It was shot August 31st, 1840, at Kingston, just outside Lewes. More recently it came into the hands of Whitcombe, of the

Bear Inn, Lewes, from whose widow it was bought in 1902 by the Misses Julia and Florence Davis, who have now given it to the Booth Museum.

He also reported that he had learnt from Mr. Charles Mosley, the Curator of the Tolson Memorial Museum, Huddersfield, who has had access to first-hand information, that the Andalusian Hemipode (*Turnix sylvatica*), recorded by Gould ('Birds of Britain,' vol. iv. no. 16) as having been obtained near Huddersfield in April 1865 was, in fact, mounted from a foreign skin belonging to a Mr. North, and has no claim to be British-killed.

From the Beaumont Collection it passed into that of Sir Vauncey Harpur Crewe, on the dispersal of which, in the winter of 1925–26, it was acquired for the Booth Museum at Brighton, where it was duly cased (Case 321). It has now been dethroned and relegated to the general collection in the Church Road Museum.

Mr. Gregory M. Mathews sent the following descriptions of new races of Flycatchers from the Papuan region :—

Gerygone chrysogaster guineensis, subsp. nov.

Differs from *G. c. chrysogaster* in being darker on the head and upper surface. The lower surface and vent are a much paler yellow, almost lacking the green tinge.

Type in the British Museum, ♂, Wakatimi, Mimika River, Dutch New Guinea, 10 May, 1911. Collected by C. H. B. Grant. Brit. Mus. Registered no. 1911.12.20. 1124.

Distribution. New Guinea (Mimika River district).

Setosura maculipectus mimika, subsp. nov.

Differs from *S. m. maculipectus* (Gray) in having the white spots on the breast-feathers larger and the white on the chin extending further down ; from *S. m. saturata* (Salvadori), from Salwatti, in not having the white stripes from the base of the mandible meeting and enclosing a black patch of feathers as in that bird.

Type in the British Museum. ♂. Mimika River, Dutch New Guinea, 18 May, 1911. Collected by C. H. B. Grant. Brit. Mus. Registered No. 1911.12.20.89.

Setosura threnothorax novæ-guineensis, subsp. nov.

Differs from *S. t. threnothorax* (Müller) in having the under surface distinctly darker and the white spots on the chest smaller.

Type in the British Museum. ♂. Mimika River, Dutch New Guinea, 12 February, 1910. Collected by G. C. Shortridge. Brit. Mus. Registered No. 1911.12.20.1292.

Rhipidura rufidorsa nova, subsp. nov.

Differs from *R. r. rufidorsa* Meyer, in having the head a darker grey and the under surface more suffused with buff.

Type in the British Museum. ♂. Mimika River, Dutch New Guinea, 7 November, 1910. Collected by C. H. B. Grant. Brit. Mus. Registered No. 1911.12.20.1319.

Rhipidura montana, sp. nov.

Adult. Head reddish-brown, back and rump deep chestnut; tail-feathers red at the base, then a broad band of black and tipped with reddish-buff for about a quarter of the length; primaries dark brown edged on the outer web with reddish, and on the inner with buff; lores and ear-coverts like the head; throat brownish, abdomen, sides of the body, and under wing-coverts buff; under tail-coverts like the rump. Wing 70 mm.; bill from nostril 5; tarsus 21; tail 93.

Probably comes near *R. lepida* H. & F.

Type in the British Museum. Mt. Albert Edward, South-east New Guinea. Brit. Mus. Registered No. 98.5.31.13.

Leucocirca leucophrys amboynensis, subsp. nov.

Differs from *L. l. atripennis* (Gray) from Aru Islands (wing 100–102 mm.) in its larger size, wing-measurement 108–111 mm.

Type in the British Museum. ♂. Pokka, Amboyna, April, 1911. Collected by C. B. Kloss. Brit. Mus. Registered No. 1913.6.10.118.

Distribution. Amboyna, Ceram, Goram, Buru, Waigou, Salawatti, Gilolo, Misol, and Batchan Islands.

Piezorhynchus alecto woodlarkensis, subsp. nov.

The female differs from the typical female from Ternate in having a larger and longer bill; the grey on the nape is darker in colour and the red of the upper back much brighter.

Type in the British Museum. ♀. Woodlark Island, 16 April, 1897. Brit. Mus. Registered No. 98.4.30.30.

Piezorhynchus alecto longirostris, subsp. nov.

Differs from the typical bird in having a much longer bill, not so wide as in that of *woodlarkensis*. The grey on the nape is reduced in extent, and the upper surface is of a deeper richer chestnut.

Type in the British Museum. ♀. Larat, Timor Laut, 5 September, 1882. Collected by H. O. Forbes. Brit. Mus. Registered No. 83.5.30.76.

Piezorhynchus alecto novæ-guineensis, subsp. nov.

Differs from the typical female in having a smaller bill and the upper surface of a lighter chestnut.

Type in the British Museum. ♀. Mimika River, Dutch New Guinea, 12 March, 1911. Collected by C. H. B. Grant. Brit. Mus. Registered No. 1911.12.20.1448.

Dr. C. B. Ticehurst forwarded the following communication :—

In the recent volume of the 'Fauna of British India,' ed. ii. vol. iv. two recognisable races of Woodpeckers seem to have been omitted :

(1) Leiopicus mahrattensis aurocristatus (Tickell) (J. A. S. B. ii. p. 579, 1833 Borabhum). Behar and Orissa,

North Central Provinces, Kandeish, United Provinces, Rajputana, Punjab, N.W.F.P., Sind.

Wing, ♂, 100–111 mm.; bill 25–30·5, mostly 27. ♀ ♀, wing 100–108 mm.; bill 23–26, mostly 24–25. (Very large series examined, over 100 of the two races.)

Remarks. The vast majority are easily separable from the southern bird by measurements of wings and bill, and the white of the upper parts occupying more space in the feathers. As may be expected with a bird of wide continuous distribution, no hard-and-fast boundary between the races can be defined, odd birds in the south are larger than normal, and a few in the north are smaller. Birds from Burma (*blanfordi*) have the same whiteness of upper parts, but appear to have smallerbills (♂ 23–26 mm.); but I have seen too few to make sure whether *blanfordi* is distinct.

(2) Dryobates macei westermani (Blyth) ('Ibis,' 1870, p. 163, Himalayas). N.W. Himalayas.

Wing, ♂, 113–118 mm.; bill 27–30. About 15 examined and a large series of *macei*.

Remarks. This is distinguished from the typical form (Bengal) by its longer wings and bill. The typical race measures, ♂, wing 100–109 mm., few to 113; bill 22–26. *Picus wagleri* (Cat. Bremen Mus. 1844, p. 91) is a synonym of *macei*; the types are still in the Bremen Museum, and Prof. Shauinsland informs me that they came from Bengal; their wing-measurements correspond to those of *macei*. Blyth evidently named a western Himalayan bird in the Amsterdam Museum, since he said it was like *macei* but larger—wing 4·625=117·5 mm.

NOTICES.

The next Meeting of the Club will be held on Wednesday, May 9, 1928, at PAGANI'S RESTAURANT, 42–48 Great Portland Street, W. 1. The Dinner at 7 p.m.

Members intending to dine are requested to inform the Hon. Secretary, Dr. G. Carmichael Low, 86 Brook Street, Grosvenor Square, W. 1.

N.B.—Special Notice:—A Special General Meeting of the Club will be held on Wednesday, May 9, 1928, immediately after the Dinner. The new rules recently drawn up by a Sub-Committee appointed by the Committee, will come up for approval. A draft of these has already been circulated.

Members who intend to make any communication at the next Meeting of the Club are requested to give notice beforehand to the Editor, Mr. N. B. Kinnear, at the Natural History Museum, South Kensington, S.W. 7, and to give him their MSS. for publication in the 'Bulletin' not later than at the Meeting.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

No. CCCXXIV.

The three-hundred-and-nineteenth Meeting of the Club was held at Pagani's Restaurant, 42–48 Great Portland Street, W. 1, on Wednesday, May 9, 1928.

Chairman: Dr. P. R. Lowe.

Members present:—F. J. F. Barrington; P. F. Bunyard; Sir Percy Cox; Major S. S. Flower; Dr. E. Hartert; H. Hughes-Onslow; N. B. Kinnear (*Editor*); Dr. G. Carmichael Low (*Hon. Sec. & Treas.*); C. W. Mackworth-Praed; Capt. W. E. F. Macmillan; Lt.-Col. H. A. F. Magrath; Dr. P. H. Manson-Bahr; G. M. Mathews; Col. R. Meinertzhagen; Mrs. Meinertzhagen; T. H. Newman; C. Oldham; G. H. R. Pye-Smith; F. R. Ratcliff; Lord Rothschild; W. L. Sclater; D. Seth-Smith; Major A. G. L. Sladen; Marquis of Tavistock; A. Landsborough Thomson; Dr. C. B. Ticehurst; B. W. Tucker; V. O. Williams.

Guest present:—Robert T. Moore.

SPECIAL GENERAL MEETING.

A Special General Meeting of the Club was held immediately after the Dinner, to ratify a series of new rules recently drawn up by a Sub-Committee appointed by the Committee.

The Sub-Committee consisted of the following :—Dr. P. R. Lowe (*Chairman of the Club*) ; Mr. N. B. Kinnear (*Editor*) ; Dr. G. Carmichael Low (*Hon. Sec. & Treas.*) ; Major S. S. Flower (*Committee*) ; Rev. F. C. R. Jourdain ; Mr. Charles Oldham ; and Major A. G. L. Sladen.

In addition to several new rules, the whole of the old ones were revised and recast. The General Meeting duly passed these and they will be issued with the List of Members, Index, etc., and appear in Volume xlviii., 1927–1928, of the Bulletin.'

Mr. B. W. Tucker read the following paper on Gynandromorphism and allied problems, entitled :—

A Review of Recent Work on Sex in Birds.

Those of you who were present at the February meeting will remember that there was then exhibited a very interesting Gouldian Finch (*Poephila gouldiæ*), having the right half of the plumage male and the left half female. On that occasion I ventured to make a few remarks on the subject of these gynandromorphs, as they are called, which are a type of abnormality quite well-known to zoologists, and on certain kindred matters connected with sex in birds. This evening I propose to try and give you rather more fully and connectedly a review of some of the more important results of modern work on this subject, which has been carried out in zoological laboratories. I am particularly glad of this opportunity, because I cannot but feel that it is a pity that we ornithologists as a body are as completely out of touch as we are with modern work in general zoology, many of the results and conclusions of which are directly relevant to the problems which we meet with in birds.

I may say straight away that I am not a geneticist, and this question of sex in birds is somewhat outside my own

particular branch of zoology. There are various zoologists in this country who have done original work in this field, and who could speak about it with more authority than I lay any claim to, but as none of them is available I have made bold to undertake the task myself, though I wish to make it clear that all I am doing is to give as concise and simple a review as I can of the results and conclusions of others. I will warn you at the outset that this is not a very easy thing to do. The subject is one of great complexity and not easy to present intelligibly to a non-specialist audience. The difficulty is increased by the fact that in the present state of knowledge it is not possible to give a complete, simple, cut-and-dried explanation of all the facts. Results of first-rate importance have been reached, but much remains to be found out. On some important questions which I shall have to refer to, opinion is divided. On some points the results obtained are even seemingly contradictory, and have not yet been satisfactorily reconciled. It is like a jig-saw puzzle in which a considerable part of the picture has been completed, but other parts are still incomplete, while with regard to some pieces we are still not quite clear how, and where, they fit in.

In order to make the subject intelligible at all, I shall have to begin by going over a little rather elementary biology.

I need hardly remind you that the bodies of animals are made up of a vast number of minute portions called cells, which have a characteristic structure. In the nucleus, which is the centre of activity of the cell, there exist certain exceedingly minute bodies, which are known as chromosomes. The evidence from a vast amount of research is overwhelming that these chromosomes are the bearers of, at any rate, a large proportion of the hereditary characters which are transmitted from parent to offspring. That, however, is a matter which I cannot go into now. With certain exceptions, which I shall have to return to, these chromosomes are present in each cell in an even number—that is to say, in pairs. In each pair one has come from one

parent and one from the other. The total number may be very small or it may be very large, but it is constant for any given species of animal.

Growth, of course, is mainly a matter of cell-division. The cell absorbs nourishment, grows to a certain size, and then divides into two cells. When it divides, each chromosome divides lengthwise into two, one half going to one daughter-cell and one half to the other. Thus the two daughter-cells have each the same number of chromosomes as there were in the original single cell, and so the characteristic number is maintained. But in the course of the development of the germ-cells, the ova in the female and the spermatozoa in the male, there is one division, known as the reduction-division, at which the chromosomes do not split, but one of each pair goes undivided to one cell and one to the other cell. Thus it comes about that a mature reproductive cell has only half the number of chromosomes that are present in an ordinary body-cell. At fertilization, when a new organism is started by the fusion of a male cell and a female cell, the characteristic bodily number is re-established. It will be clear to you that, unless there was some such mechanism as I have just described, the number of chromosomes would be doubled at each generation.

Now, although, as I have said, the chromosomes are normally present in the body-cells in pairs, it is found that in some animals one sex has one more chromosome than the other. One sex has only one X-chromosome, as it is called, and the other has two. Experiment shows that the presence of one or two X-chromosomes in the cells is the determining factor which decides whether an animal will be a male or a female. We do not yet know exactly how it works, but we can say, in a general way, that the presence of this X-chromosome in double dose modifies the chemical processes going on in the cell in such a way that it develops along the lines of one sex, while when it is present in single dose it develops along the lines of the other sex. In some animals, in the sex which has one X-chromosome, this has a mate, the so-called Y-chromosome. In such animals the

number of chromosomes in the two sexes is the same, but the Y-chromosome is inert. For present purposes it can be regarded as having no influence on development and can be neglected.

At the reduction-division of the germ-cells in the sex which has only one X, let us say the female, though it may be either male or female in different animals, half of the germ-cells will get X and half will get no X, or if it is a form with a Y-chromosome will only get the inert Y, which does nothing. On the other hand, every spermatozoon will have one X. Thus, when a spermatozoon fertilizes an X-bearing egg the resulting organism will have 2 X and be a male. If it fertilizes an egg without X the resulting organism will have one X only and will be a female. That is the ordinary way in which sex is determined. The description I have just given holds good as it stands for birds; in some other animals, such as mammals and most insects, it is the female which has two X's and the male one, but the essential process is just the same. Now, it will be clear to you that if in a fertilized ovum with two X's (a male in the case of birds) an abnormality occurred at the very first cell-division, so that one of the X's, instead of dividing, went undivided to one daughter-cell, or if it divided and one of the products of division by some accident failed to be incorporated in the cell, you would have one daughter-cell with 2 X, the male number, and one with 1 X, the female number. One of these cells will give rise to one half of the body and the other cell to the other half. So one half of the body will be male and the other half female—in fact, you will have a gynandromorph. This explanation of gynandromorphs was first arrived at in the case of certain insects, in which the conclusion can be confirmed, owing to the fact that you can actually count the chromosomes under the microscope. In birds, the chromosomes are so numerous and minute that no one has succeeded up to now in taking exact counts, but it is reasonable to suppose that the gynandromorphs which occasionally occur are due to the same causes as in insects. I might add that

the fact which I have already mentioned, that the male in birds has the constitution 2 X and the female 1 X, is conclusively established by breeding experiments, which I cannot go into now.

Of course, if the aberration in chromosome distribution occurred at a later division than the first you would not get a half-and-half gynandromorph, but one in which the greater part of the body was male and a smaller part female. Gynandromorphs of that kind actually occur in insects, but

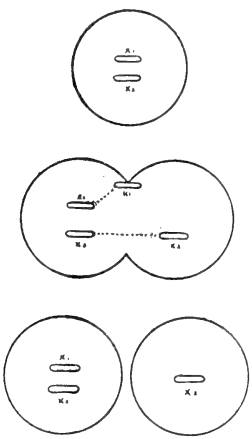

Fig. 1.—Diagram illustrating the explanation of the origin of a Gynandromorph by the elimination of one of the products of division of one of the X-chromosomes. The other chromosomes are not shown.

the few which have been described in birds seem to be all of the bilateral type. There are only three or four which generally figure in zoological literature, a Chaffinch described by Weber in 1890, a Bullfinch by Poll in 1909, and a Pheasant by Bond in 1913, while in 1923 Macklin described a rather different type of gynandromorph in the fowl which I shall refer to again presently. The existence or former existence of several other gynandromorph birds is known, but they have not been adequately described. Professor Poll, of Hamburg, whom I met quite unexpectedly

only a day or two ago in Oxford, tells me that he has had another gynandromorph Bullfinch, which has recently been described, but I have not yet seen the paper. It is thus a fact that taking into account Lord Rothschild's bird and the one seen by Mr. Seth-Smith, no less than four of the very few bird gynandromorphs known have been Bullfinches. This seems to make it quite clear that somehow or other the Bullfinch is specially liable to these aberrations in chromosome distribution. Professor Poll believes that it is due to hybridization with one of the other races, I presume *Pyrrhula p. pyrrhula*, which presumably upsets the delicate adjustment of the chromosomes to one another in such a way as to encourage these developmental "mistakes."

You will have observed that these bird gynandromorphs are individuals which by rights, so to speak, should have been males. It is presumably purely a matter of chance on which side the chromosome drops out, so that the female half can be either on the right or left. There is no *à priori* reason why the female half should necessarily coincide with the side (the left) on which the functional ovary and oviduct are present in normal birds. As a matter of fact, in the finches the female side has been the left and the male the right, but in Bond's Pheasant (and I understand also in Poll's new Bullfinch) it was the reverse. In the Pheasant, also, the reproductive organs were not male on one side and female on the other, but were both ovotestes. It seems that something has happened here so that each reproductive organ has been formed from both XX and X cells, and there is another remarkable point about this Pheasant: instead of the tail-feathers being male on the left and female on the right like the rest of the body, each individual tail-feather is half and half! Admittedly this is very puzzling, and the problem of the gynandromorph is seen not to be in all cases quite so simple as at first sight. Evidently we have not quite got the whole story—there is something more to be found out.

I think at this point we had better stop a moment to consider what is known about the mode of operation of these

X-chromosomes or sex-chromosomes about which I have been talking. How does the presence of one or of two microscopic particles in a cell result in a difference of sex? We are still very far from being able to answer this question completely. But we have already with regard to the working of the sex-chromosomes an inkling of what happens, and this has been obtained by some remarkable work on insects. It has been known for a long time to entomologists that if you cross certain allied species of Lepidoptera, or different geographical races of one species, you tend to get a large percentage of abnormal forms which are a mixture of male and female characters. This happens, for example, in crosses of different races of the Gipsy-Moth (*Lymantria dispar*). A German zoologist, Goldschmidt, has subjected these to an exhaustive experimental analysis, which led him to certain most important conclusions. It would be out of the question here to go into detail about his methods and results, but briefly the conclusion to which they led is this.

The determination of sex depends upon the interaction between what we may call a male-determining substance and a female-determining substance. The male-determining substance is produced by or under the influence of the X-chromosome. The female-determining substance is produced in the egg-cell—it is not certain by what part of the cell, but that need not trouble us. We may speak for convenience of these male and female determining substances as M (for male) and F (for female). The relation between them is such that 1 F exerts a stronger effect than 1 M, but 2 M exerts a stronger effect than 1 F. Every egg has 1 F, but a fertilized egg having 2 X-chromosomes will have a double dose of M, while one having 1 X will have only a single dose. The former, because 2 M's over-ride the effect of 1 F, will be a male, the latter, because 1 F over-rides the effect of a single M, will be female.

Now, in different races these sex-factors are produced at different rates, faster in some, slower in others, but in each race the rates of production of M and F are balanced against one another so as to give a normal result. When M is

produced exceptionally fast, F is produced exceptionally fast too, so all goes well. But suppose you mate a male of one of these fast-working races with a female of a slow-working one. Those offspring which should be female will have 1 F, which will be slow-working, coming as it does from the mother, and 1 M coming from the father, which will be faster-working than normal. What will happen? The slow-working F will not be able to keep pace with the fast-working M. The concentration of male-determining

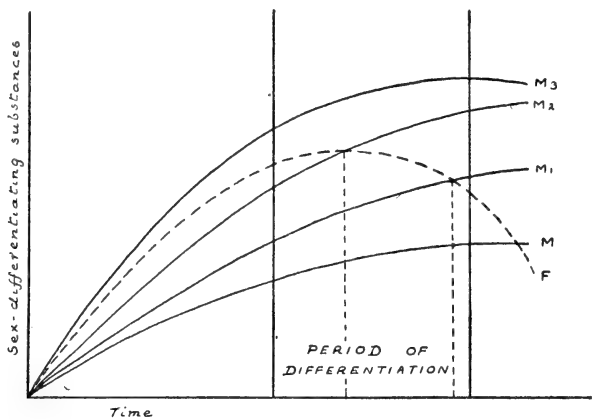

Fig. 2.—Graph illustrating the explanation of the origin of intersexes in the Gipsy-Moth (*after* Goldschmidt). F = Curve of production of female-determining substance. M = Curve of production of male-determining substance in the same race. M_{1-3} = Curves of more rapid-working "M's." The points of intersection of the M and F lines within the period of differentiation are the critical points at which the "switching-over" from female to male lines of development occurs in different crosses.

substance will become stronger and stronger until finally it will swamp the effects of F, and from that point on the insect, which started development as a female, will be switched off on to male lines. Those hard parts which have acquired their final form before this critical point is reached will be incapable of change and will remain female, but those which are developed later will be male. The faster the M works relatively to the F the earlier in the development of the

insect will the switching over from female to male take place. If M is produced very rapidly indeed the switching over will occur so early that none of the hard parts have yet been formed, and the creature will turn out altogether male, so that instead of the offspring of the cross being 50 per cent. males and 50 per cent. females with a more or less marked admixture of male characters they will be all males. This actually happens in certain crosses. You can get a comparable change of male into female by combining through appropriate crosses a sufficiently fast-working F with two slow M's.

The main upshot of all this, you will note, is that it is not the absolute amount of the sex-determining factors that matters, but the relative amounts—the relative concentration, so to speak, of M and F. It also shows that under certain abnormal conditions the normal results of the chromosome constitution may be modified, so that an individual which by chromosome constitution should have been of one sex may owing to disharmonies in the rate of production of the sex-determining factors be converted into the other sex, a result of great importance.

Now, in insects, every individual cell of the body pursues its differentiation independently by virtue of its chromosome constitution, and no outside influences exert any effect. You can replace ovary by testis or testis by ovary, and it has no effect whatever on the external characters. In mammals the position is different. In them all that the chromosome constitution determines is that the animal shall produce a testis or ovary as the case may be, and these organs produce an internal secretion, which is passed into the blood and controls the further differentiation of the sexual organization—in other words, of those features which are commonly referred to as secondary sexual characters. Such internal secretions are called hormones. Their action is illustrated in mammals by the well-known effects of castration and grafting in of gonads of the opposite sex, which results in a more or less extensive assumption of the characters of the sex of the graft.

I ought, perhaps, to say that "gonad" is a convenient zoological term, meaning the reproductive organ of either sex, either testis or ovary.

You will perceive that in mammals, where the sex-characters are determined by hormones secreted by the gonad and passed all over the body in the blood, you cannot get a gynandromorph. That type of abnormality can only occur in forms like insects, in which the male or female character of each cell individually is determined by the chromosome constitution of that cell. The fact that you do get gynandromorphs in birds seems to show that their organization must be of the same type as in insects.

We have, then, on the one hand, the insect type, where the chromosome content of the individual cells is the deciding factor, and, on the other, the mammal type, where the secondary sexual characters are determined entirely by the hormone produced by the gonad. We have seen that the occurrence of gynandromorphs seems to place birds definitely in the former class. But a complication is introduced, for it may have occurred to you already that there are certain facts about birds which seem to indicate that somehow or other hormones *are* involved. Every ornithologist knows that in female birds in which the ovary has become atrophied owing to old age or disease, the plumage tends to become cock-like and it may even begin to crow and show other male-like tendencies. Furthermore, if you castrate a cock and successfully perform the operation of grafting in an ovary, the plumage of that cock becomes hen-like at the next moult. These facts are difficult to explain, unless we conclude that both sexes would have a similar cock-like plumage, but for the ovary of the female producing a hormone which inhibits the development of cocky plumage. On the other hand, this is difficult to reconcile with the occurrence of gynandromorphs, which seems to imply that there are no hormones or at least that they are not of paramount importance.

You could get over the difficulty up to a point by saying that the testis exerts an effect on cells of XX constitution

which prevents their responding to the female hormone. This would be consistent with the assumption of hen plumage by a cock which has had its testes removed and an ovary grafted in. But, then, there is the difficulty that in a cock with its testes intact, but an ovary grafted in in addition, the plumage undergoes a conspicuous modification in the female direction : the ovary of the fowl does exert an effect on XX cells even in the presence of testes. One is tempted to say that the conditions in Passerine birds and in fowls cannot be quite the same, and this gains a certain support from the fact that the only known gynandromorph fowl, the one described by Macklin, to which I made a passing allusion earlier in the evening, is a half and half gynandromorph in respect of its organs, but not in its plumage, which is like that of a cock with an ingrafted ovary such as I have just referred to—that is to say, predominantly henny. On the other hand, we have to remember that Bond's Pheasant, a bird closely allied to the fowl, does present a half-and-half condition of the plumage like the Finches. Perhaps I ought also to mention another puzzling and rather anomalous result of a recent piece of work—namely, that if an extra quantity of testicular tissue is grafted into a normal cock he assumes henny plumage ! It seems that too much testis, so to speak, produces the same effect as an ovary. I think, however, it is not desirable to base too hurried conclusions on this result before the experiments have been extended and amplified.

Without doubt we are faced by some real difficulties here ; apparently something is missing from the picture, which it remains for future research to fill in, and a good deal more experimental evidence is needed before all the observed facts will take their proper place in one comprehensive interpretation. More than one tentative explanation of the process of sex-differentiation in birds and the respective rôles of the sex-chromosomes and the gonads has been put forward as a working hypothesis. One which finds some favour, and is supported by quite a lot of evidence, may be briefly described as follows. The sexual development is determined, to begin with, by the chromosome constitution

of the cells. During the embryonic life of the 1 X individual (the female), the female-determining substance is effectively in excess, and the bird develops along female lines. But the production of the female-determining substance soon slows down, so that the quantity of male-determining substance catches up and passes it just as in Goldschmidt's Gipsy-Moth intersexes. But by the time this happens the ovary has developed, and this exerts an influence which prevents the male-determining substance from taking effect. If, however, the ovary ceases to function from old age, disease, or other causes, there is nothing to prevent the male-determining

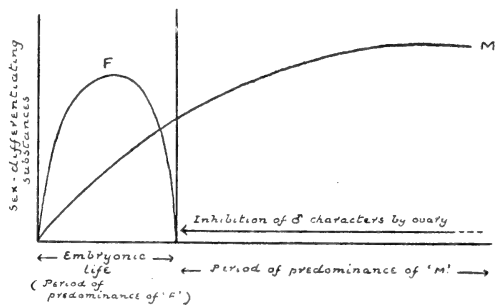

Fig. 3.—Graph illustrating tentative explanation of conditions in the female fowl. (*After* Crew.)

substance from taking effect, and the bird begins to be modified in the direction of maleness. How far this modification may proceed I shall have occasion to consider in a moment.

Theoretically, the effect which the ovary and testis undoubtedly exert might be exercised through hormones, or it might be exercised without hormones owing to the ovary requiring for its maintenance and nourishment certain particular conditions in the internal chemistry or metabolism of the body which differ from those which prevail where testis is the gonad, and are definitely inimical to the development of male features. Crew, of the Animal Breeding Research Department at Edinburgh, the leading British authority on these matters, definitely rejects the idea of hormones in birds, and favours the latter of the two alternatives I have

just mentioned or something essentially similar. Lillie, one of the most eminent of American workers, on the other hand, dismisses Crew's view as untenable, and I must say that, so far as I can judge, it does seem to me that the latest work makes it extremely difficult to get away from the conclusion that definite specific male and female organs are at work. At any rate, while recognizing that the matter is still *sub judice*, I think the evidence is sufficient to warrant us in assuming, for purposes of discussion, that it is by means of such hormones that the gonads exert their effect, though the hormones have not, as it were, taken complete control, as they have in mammals.

I now come on to the final phase of the subject, that of actual sex-reversal in the fowl. We have seen—in fact, you are all well aware—how a hen which, either by artificial means or in the course of nature, has lost its ovary develops male plumage and other male features. But the change may go further than this, and in certain circumstances an apparently normal hen may undergo a complete transformation into a cock and, furthermore, can breed in the new condition. That a hen which has laid fertile eggs and produced chickens should become modified into a cock and become the father of a new generation is so startling and so opposed to our preconceived notions about the fixity of sex in the higher animals that I was not surprised, when I alluded to this strange phenomenon at the February meeting, to notice a certain scepticism amongst some of my hearers! But it is established at least in the cases of one Pigeon and, still more indisputably, of a fowl described by Crew. The history of Crew's bird was accurately known. It began as an apparently normal Buff Orpington hen, a good layer and the mother of chickens, and it was under observation during almost the whole process of transformation into a functional cock from a quite early stage when it had recently ceased laying, but the plumage was still completely henny, and only the comb and wattles were a little larger than in a normal hen *.

* For fuller details, see 'Proceedings of the Royal Society,' vol. xcv. (1923), and Crew, 'Genetics of Sexuality in Animals' (Camb. Univ. Press), 1927.

This bird was paired to a virginal hen, was found to be producing a few normal spermatozoa, and in due course became the father of two chickens! After death, examination confirmed the conclusion that it possessed functional testes in a phase of reduced activity, and the ovary was practically destroyed by tuberculosis. Lest there should be any misapprehension, I may emphasize that all this was carried out under the most careful supervision of a highly competent man of science: there is no doubt about it.

A query which these remarkable facts may well suggest is: What would be the effect of artificially destroying or removing the ovary by an operation? To anticipate a little, I may say that Benoit in France and Zawadowsky in Russia have both described complete sex-reversal in hens following such an operation. A change in the male direction always follows in such cases, but normally it does not proceed so far.

Castrated fowls of both sexes are very similar. The plumage is cock-like, but looser and more luxuriant. The comb and wattles are pale and shrunken, and their behaviour may be described as neutral. The cocks do not fight other cocks and take no interest in hens, and the hens are equally indifferent. Gonads of the opposite sex grafted into these castrated birds result in their assuming the plumage and head-furnishings of that sex. But if gonads of the opposite sex are grafted into normal birds whose own organs have not been removed the results are different. A cock with an ovary-graft develops a plumage which is hen-like but richer-coloured and with the tail-feathers intermediate, while the head-furnishings remain cock-like. A hen with a testicular graft is practically the same in plumage and head-furnishings as a cock with an ovarian graft.

From this it seems clear that a cock-like plumage would be present in the hen but for the ovary holding it in check. The effect of the testis is to tighten up the plumage and cause the development of cocky head-furnishings. The effect of the ovary is to induce hen-feathering and, in the absence of testis, henny head-furnishings, but when testis and ovary

are present together each exerts its own effect. The testis causes a cocky comb and wattles, and the ovary modifies the plumage towards the henny type. But this effect of the ovary on plumage is not entirely uninfluenced by the presence of a testis in the body at the same time, for the plumage in such circumstances shows a certain tendency towards lengthening and a warmer colouring than is found in normal hens.

It is clear, then, that the plumage and head-furnishings are very closely dependent on the gonads. But there are other sex-characters which are not, or but little, affected. Such characters are the size, general form, instincts, and behaviour of the bird. Birds with both ovary and testis retain the characters of their real sex in these respects, and similarly a masculinized hen (ovary removed and testis grafted in) can be distinguished at once from a real cock by anyone in the least familiar with fowls, owing to its being smaller and shorter in the leg and carrying itself rather differently, and its behaviour is stated to remain more like a hen's.

You will see, then, that, although the chromosome constitution can be over-ridden to a great extent under particular conditions, it cannot ordinarily be over-ridden completely. But what about the hens which developed into cocks? We have seen that ordinarily after ovariotomy male plumage is assumed, but not male head-furnishings or instincts. But Benoit and Zawadowsky, in three instances out of a quite small number of experiments, have described complete sex-reversal in such operated birds. We shall now have to consider this sex-reversal a little more fully.

Until quite recently the position was that we had these three cases of sex-reversal following ovariotomy and at least two properly authenticated cases of such a change completed in the course of nature, together with several other cases carefully studied by Crew and Fell in which the change was more or less considerably advanced. But these were all more or less isolated instances, and obviously what was needed more than anything was an extensive study of a

much larger number of birds under controlled conditions. Such a study has now been carried out by Domm in Lillie's laboratory at Chicago. Nothing on anything like such a large scale had been attempted previously, or the birds and their behaviour so fully and carefully observed. The investigation has extended over several years, and over a hundred birds were operated on and studied. The results were only published last summer *. This most important enquiry has considerably extended our knowledge, and, although some of the results had already been obtained by earlier workers, this new investigation has supplemented and amplified them, in addition to adding others that are new.

To sum up, it is found that when the ovary of a hen is successfully removed, the bird develops, as we have seen, male plumage and a pale and shrunken comb. It is quiet and shy in its behaviour. But after a varying interval, a remarkable change takes place. The bird reassumes female plumage; but at the same time the head-furnishings become cock-like, and so does the behaviour. Such birds commonly crow, fight other cocks, are generally (as it is rather pleasingly described) "courteous to females," and one which has been under observation is actually known to tread hens.

It is found that after ovariotomy the right gonad undergoes a compensatory development. It is commonly said that the right ovary is absent in birds, but this is not strictly true; it is there, but very small and undeveloped. When the ovary is removed this rudimentary right gonad hypertrophies, as I have said, but it gives rise not to an ovary, but to an organ which in form and microscopic structure is testis-like, though it has never actually developed germ-cells in any of the birds examined by Domm. It is under the influence of this organ that the bird assumes henny plumage and male instincts and head-furnishings. Under its influence the oviduct is also reduced, and the male ducts, which are apparently always present in a rudimentary, undeveloped

* 'Journal of Experimental Zoölogy,' vol. xlviii. (1927).

form in the hen, as they are in the females of many other animals, enlarge. That these effects are really due to the compensatory right gonad can be shown by removing it, when the characters revert to the same condition as just after ovariotomy, *i. e.*, male plumage and shrunken head-furnishings. Sometimes when the operation of ovariotomy has not been quite successful, and a little bit of ovary is left in, this will regenerate. Generally it gives rise to a testis-like structure like that on the right, and exerting the same effect on the characters; but in a good many cases it became an ovary, and in two cases (out of about 65) an ovotestis. In general, the degree of development of the characters dependent on the regenerated testis-like organs shows a pretty good agreement with the degree of development of those organs.

The explanation which Domm and Lillie give of the origin of a testis-like organ from the right rudimentary gonad is as follows:—We know definitely that the ovary arises in two distinct stages. The cells of the first proliferation, corresponding to that which in the male gives rise to testis, stop short in their development and do not give rise to germ-cells. A second proliferation of cells forms the true ovarian tissue or cortex of the ovary, which surrounds the products of the first proliferation, which form the medulla or core of the ovary. These latter cells have the character of embryonic testis-cells, and according to this view possess the capacity of producing the male hormone, but this capacity is normally kept in abeyance by the presence of the ovarian cells. The tiny right gonad is also formed of cells from the first proliferation, and normally its further development is inhibited before it begins to form any cortex at all. According to this view, the tissue forming the undeveloped right gonad and the medulla or core of the ovary constitutes a sort of potential testis, and if the inhibition is removed will develop along testis-like lines and produce a hormone resembling the male hormone in its effects. If the onset of the inhibition in the early life of the chick was a little delayed, the right gonad might have time to begin forming a little cortex.

It is known from a study of normal birds that this actually happens occasionally, and such an occurrence will account for the very few cases observed amongst Domm's birds, in which ovarian tissue was formed on the right. Again, the varying results of regeneration on the left after incomplete ovariotomy would depend, on this view, on whether the fragment or fragments left behind were cortex or medulla or both. This hypothesis is thus consistent with the experimental facts. It is also consistent with the fact that no one has ever found a cock undergoing transformation into a hen*. Whether it is actually the correct explanation remains for further investigation to settle. Crew would rather say that the internal conditions of the body—the internal environment, in zoological language—are only favourable for the development of an ovary during embryonic life and that where conditions are normal any new proliferation of cells arising later will give rise to testis.

The problem of exactly how and from what source the testicular cells arise in an originally female bird involves certain questions of great importance in zoology, but they need not detain us here.

The upshot of this very careful investigation, in which a large number of ovariotomized hens consistently developed a testis-like organ from the right rudimentary gonad, but in no case got as far as producing actual male germ-cells, is that Domm and Lillie are not prepared to admit the possibility of such an occurrence in normal hens. The recorded cases are not disputed, but it is held that these cases are due to some constitutional abnormality, comparable, perhaps, to that of Goldschmidt's Gipsy-Moth intersexes, and that such a complete sex-reversal is not, as Crew has held it to be, a possible eventuality in any normal hen whose ovary becomes either diseased or exhausted.

* In the absence of a much fuller knowledge of the internal organs than is available, I do not think that Lord Rothschild's three Pheasants which have the appearance of cocks assuming female plumage can be admitted as cases of such a transformation, such an interpretation being in opposition to all the other evidence.—B. W. T.

I do not think that the time is ripe for attempting a further discussion of these alternative views. I would merely observe that cases like Crew's of a hen becoming transformed into a complete functional cock, with all the characters of that sex, including plumage, evidently do not come under quite the same category as these operated birds which develop a testis-like organ inducing male instincts, but hen-feathering. The cases of Benoit and Zawadowsky are, however, more difficult to understand in the light of Domm's work.

I think I must end on the note I have already touched several times this evening—namely, that more and still more experimental work is needed before the time arrives when we can reach a complete and satisfying solution of the whole problem; but the vigour with which such work is being prosecuted at the present time encourages one to hope that that time may not be very far off.

Col. R. Meinertzhagen forwarded the following description of two new birds:—

Columba livia dakhlæ, subsp. nov.

The palest of all Rock-Pigeons. From breast to vent very pale pearl-grey—almost white. Shoulder of wing and mantle pale pearl-grey, lower back pure white. In other respects generally much paler than *C. livia gaddi*.

Wings of seven males and females, 195 to 215 mm.

Type in the Tring Museum. ♀. Dakhla Oasis, Lybian Desert, 24.iii.1928.

Seven examined.

Obs. Only known as yet from Dakhla Oasis, where it is resident. Birds, possibly of this race, also occur rarely in Kharga Oasis.

Streptopelia senegalensis dakhlæ, subsp. nov.

Differs from *S. senegalensis ægyptiacus* in having the upper parts generally paler, with much more isabelline colour, especially on the wings. Underparts paler and not so deep vinous on the breast.

Is nearer *S. senegalensis sudanensis*, from which it differs in having the upper parts more sandy than rufous isabelline. The lower parts are darker than in *sudanensis* with less vinous and more isabelline tinge.

From *S. senegalensis æquatorialis* it differs in having the back not brown with faint isabelline markings but rich sandy isabelline.

Wings of two, male 149, female 139 mm.

Type (temporarily) in our collection. Male, Dakhla Oasis, Lybian Desert, 25.iii.1928.

Two examined.

Obs. Only known as yet from Dakhla Oasis, in the Lybian Desert, where it is resident.

Dr. C. B. Ticehurst forwarded the following description:—

Sturnus vulgaris persepolis, subsp. nov.

Differs from *caucasicus* in having entire throat *green*; belly more *green*, less purple; mantle, rump, and most upper tail-coverts more *purple* than green; edges to greater coverts and secondaries and flanks strong *bright green* with slight violet gloss instead of red or violet purple.

Differs from *porphyronotus* in having the upper and under tail-coverts and edges of tail *green* not purple-red; edges to coverts and secondaries and the flanks a brighter green instead of a bronze-green.

♂. Wing 127·5–129.

Type-locality and distribution. Shiraz and L. Niriz in S. Persia.

Type in the British Museum. ♂, Baba Hazi, 19 m. S.E. of Shiraz, Oct. 7, 1918. J. E. B. Hotson coll. Registered No. 1923.12.23.187.

Ten specimens examined.

N.B.—*S. v. persepolis* belongs to the group with green head, throat, and ear-coverts, and purple back. It resembles some specimens of *vulgaris* in which the back has more purple than normal, but always differs from them in having in the

male very dark under wing-coverts with narrow white edges and the spotting of the upper parts in winter nearly white. The juvenile dress also is very much paler. I have hesitated for some years to name this bird, in order to make sure it was not already named. There is nothing like it in the British or Tring Museums, and Prof. Sushkin, who kindly examined these specimens, tells me that out of several hundreds collected together from various Russian museums there is not any specimen like them. *S. v. persepolis* is not the recently described *heinrici* from Masanderan, which has the same sheen as *caucasicus*, but is smaller (one examined Berlin Museum).

Dr. C. B. Ticehurst also communicated the following :—

In the J. f. O. lxxvi. pt. 2, p. 342, Dr. E. Streseman has described as new *Pica pica laubmanni* from Kelat in Beluchistan, and transfers Bonaparte's name *bactriana* to the bird from Turkestan. Now, Bonaparte's description of *bactriana* was based on Blyth's unnamed description of a bird collected at Kandahar by Hutton (Cat. Birds Mus. Asiat. Soc. p. 91). Bonaparte's distribution "Persia orientali" was used either widely or geographically loosely, and included Kandahar in its embrace and cannot be stretched to include Turkestan. No one has ever shown that the type-locality of Kandahar was wrong, the only condition on which a type-locality can be shifted, and Dr. Streseman's suggestion is untenable. Kelat and Kandahar are, of course, within a comparatively short distance of one another, and examination of birds from both localities shows that both are the same. *P. p. laubmanni*, therefore, is a synonym of *bactriana*.

Tom. cit. p. 362. Dr. Streseman describes as new *Motacilla alba transcaspica* from Astrabad, Caspian Provinces of Persia, based on three specimens from that province, and compared with a series from Altai and Baikal, and a *single* bird from India ; it is said to differ from *personata* in having a slightly longer wing and tail. Now, Gould's types of *personata* came from India and are still in the British

Museum, where I have examined them. One is in summer dress, wing 95, tail 97; the other in winter dress, wing 93, tail 92 (very worn). In 1922, Bombay Nat. Hist. Soc. Journal, p. 1089, I published some notes on the plumages of this bird and gave a series of measurements of correctly sexed birds as follows:—

India: ♂, wing 94·5–98, tail 98–102, bill 16·5–17·5. ♀, wing 87·5–95, tail 90–100, bill 15·5–17.

I have since measured many more, but have no alteration to make except that the tail may be a mm. or two shorter if worn.

In addition, I have measured the following:—E. Persia, ♂, wing 99·5, tail 102; Djarkend, Turkestan, 3 ♂, wing 94·5–96·5, tail 95–99·5; Issykul, 4 ♂, 93–96, tail 96–97. ♀, wing 92, tail 95; L. Balkash, ♂, wing 99, tail 104; Tiskan, ♂, 93·5, tail 96·5. ♀, 92, tail 98; Altai, ♂, wing 89·94, tail 91, 96·5. ♀, wing 91, tail 96. It is obvious that Dr. Streseman's measurements for his *transcaspica* do not differ from Indian birds and Turkestan birds are also the same. Whether Altai birds are really smaller I cannot say, as I have only seen the three above. *M. a. transcaspica* then becomes a synonym of *personata*.

Tom. cit. p. 378. Dr. Streseman describes as new *Sylvia communis rubicola* from Kuldja in Chinese Turkestan, being like *icterops* but larger: 5 ♂, wing, 75–79; ♀, 77 as against 4 ♂, 68–72, of *icterops* from Eregli, in the Taurus, and 8 ♂, 71–74, 3 ♀, 73–74 from Gilan. A large series from Turkestan which I have measured: ♂, wing 74–78·5; 5 Egypt and Palestine, ♂, 72–77·5; 2 Elburz, ♂, 74–75; 3 Sind, ♂, 74–77·5.

The birds from Eregli seem very small compared with those from Turkestan, but there also seem to occur in the west large birds also—maybe, Turkestan birds average larger.

Mr. P. F. Bunyard exhibited two drawings of a Cuckoo at a Reed-Warbler's nest, one by Prof. Rocors and the other by Miss Edna Bunyard. These drawings had been constructed from material supplied by Mr. Bunyard.

NOTICES.

The next Meeting of the Club, the last for the Session, will be held on Wednesday, June 13, 1928, at PAGANI'S RESTAURANT, 42–48 Great Portland Street, W. 1. The Dinner at 7 p.m.

Members intending to dine are requested to inform the Hon. Secretary, Dr. G. Carmichael Low, 86 Brook Street, Grosvenor Square, W. 1.

Members who intend to make any communication at the next Meeting of the Club are requested to give notice beforehand to the Editor, Mr. N. B. Kinnear, at the Natural History Museum, South Kensington, S.W. 7, and to give him their MSS. for publication in the 'Bulletin' not later than at the Meeting.

BULLETIN

OF THE

BRITISH ORNITHOLOGISTS' CLUB.

No. CCCXXV.

THE three-hundred-and-twentieth Meeting of the Club was held at Pagani's Restaurant, 42–48 Great Portland Street, W. 1, on Wednesday, June 13, 1928.

Chairman: Dr. P. R. LOWE.

Members present:—W. SHORE BAILY; E. C. STUART BAKER; D. A. BANNERMAN; F. J. F. BARRINGTON; A. L. BUTLER; J. CUNNINGHAM; R. H. DEANE; J. DELACOUR; A. EZRA; Major S. S. FLOWER; G. H. GURNEY; Rev. J. R. HALE; H. HUGHES-ONSLOW; Rev. F. C. R. JOURDAIN; N. B. KINNEAR (*Editor*); Dr. G. CARMICHAEL LOW (*Hon. Sec. & Treas.*); N. S. LUCAS; C. W. MACKWORTH-PRAED; T. H. NEWMAN; G. H. R. PYE-SMITH; R. H. READ; C. B. RICKETT; Lord ROTHSCHILD; D. SETH-SMITH; A. LANDSBOROUGH THOMSON; C. R. WOOD; C. DE WORMS.

Guests present:—P. BROWNE; Dr. N. KURODA; W. P. LOWE; W. ROWAN.

Lord ROTHSCHILD exhibited the hitherto unknown egg of the Flightless Rail (*Atlantisia rogersi* Lowe) of Inaccessible Island, Tristan d'Acunha group, and described it as follows:

Greyish milk-white tinged with buff; dotted all over sparingly with rather small chocolate-rufous spots and with underlying lavender-mauve; both the main chocolate-rufous and the underlying mauve spots are considerably more concentrated round the apex.

Length 35 mm., breadth 25 mm.

This egg is a typical RAIL'S EGG and very large for the size of the bird; it is almost indistinguishable from some varieties of the egg of *Crex crex* (Linn.).

The clutch consisted of three eggs, one only of which has reached me so far, though one other is in England.

Lord ROTHSCHILD also exhibited the eggs of 52 other species of Rails for comparison, viz. :—

Rallus aquaticus Linn. Europe.
R. elegans Aud. Eastern U.S.A.
R. crepitans Gm. Eastern U.S.A.
R. virginianus Linn. N. America.
R. antarcticus King. Argentina.
R. pectoralis pectoralis Temm. Queensland.
Limnopardalis rytirhynchus (Vieill.). Argentina.
L. maculatus (Bodd.). Argentina.
Hypotænidia striata (Linn.). India.
H. philippensis andrewsi Math. Cocos Keeling.
H. ph. assimilis (Gray). Norfolk Island.
H. ph. lesouefi Math. New Britain.
Cabalus modestus (Hutt.). Little Mangare, Chatham Islands.
Eulabeornis pœcilopterus (Hartl.). Fiji.
E. castaneiventer Gould. Queensland.
Tricholimnas sylvestris (Scl.). Lord Howe Island.
Gymnocrex plumbeiventris (Gray). Papuasia.
Aramides chiricote (V.). Argentina.
A. ypacaha (V.). S. Brazil, Argentina.
Gallirallus australis (Sparrm.). S. Island, New Zealand.
G. earli (Gray). N. and S. Islands, New Zealand.
G. brachypterus (Lafr.) S. Island, New Zealand.
Crex crex (Linn.). Europe.
Porzana porzana (Linn.). Europe.
P. carolina (Linn.). N. America.
P. pusilla intermedia (Herm.). Europe.
P. parva (Scop.). Central and South Europe.
P. exquisita (Swinh.). E. Asia.
P. tabuensis tenebrosus (Gray). Norfolk Island.
P. leucopyrrha (Vieill.). Argentina.
P. melanophæus (Vieill.). Argentina.
P. jamaicensis stoddardi (Coale). E. and N. America.

Porzanula palmeri Frohawk. Laysan Island.
Poliolimnas cinereus collingwoodi Math. Philippines etc.
Amaurornis phœnicura (Forster). Indo-Malaya.
Rougetius rougeti (Guér.). Abyssinia.
Tribonyx mortieri Du Bus. S. Australia, Tasmania.
Microtribonyx ventralis (Gould). Australia.
Gallinula sandwichensis Streets. Hawaiian Islands.
G. chloropus (Linn.). Europe.
G. galeata Bp. America.
G. angulata Sundev. Tropical Africa.
Porphyriola martinica (Linn.). America.
Porphyrio cœrulæus (Vandelli). Mediterranean Countries.
Fulica atra Linn. Europe.
F. cristata Gm. S.W. Europe, Africa.
F. americana Gm. N. America.
F. alai Peale. Hawaiian Islands.
F. chilensis (Des Murs)=*F. ardesiaca* Tschudi. Peru.
F. rufifrons Phil. & Landb. Argentina.
F. armillata (Vieill.). Argentina.
F. leucoptera (Vieill.). Argentina.

The only remarks to be made on these eggs are that the two at the bottom of the box of *Crex crex* are most like the egg of *Atlantisia*. The eggs of *Fulica rufifrons* and *F. armillata* resemble more those of *Gallinula*, though the birds are typical *Fulica*. The egg of the extinct *Cabalus modestus* is unique, and besides the one of *Porzanula* exhibited the only other is a broken example, also at Tring. This egg is more like that of *Rallus* and less like *Porzana* than the one exhibited.

The eggs of *Porzana jamaicensis stoddardi* are very unlike a Rail's egg and closely resemble eggs of various Passerine birds in their creamy-white colour and rufous spots with no underlying markings. The eggs of *Tricholimnas sylvestris* have only once been obtained before.

He also exhibited a skin of *Atlantisia rogersi*, one of the parents of the egg described *antea*. He further exhibited the skins of a number of Flightless Rails and some very rare Porzanas.

Among the Flightless Rails exhibited is the completely

extinct Tristan d'Acunha Gallinule or "Island Hen," *Porphyriornis nesiotis nesiotis* Sclat., of which a closely-allied subspecies, *P. nesiotis comeri* Allen, still exists on Gough Island.

Then the following were shown :—

Pareudiastes pacificus Hartl. & Finsch. Samoa Islands. (This bird is almost extinct.)

Cabalus modestus Hutton. Little Mangare Island, Chatham Islands. (Completely extinct.)

Pennula millsi Dole. Hawaii, Hawaiian Islands. (Completely extinct.)

Porzanula palmeri Frohawk. Laysan Island. (Completely extinct on Laysan, but still found ferally in some numbers on Midway Island, being descendants of several that escaped from their cage when my collector, Henry Palmer, visited these islands in June and July 1891 and a later liberation.)

Porzana jamaicensis jamaicensis (Gm.). Jamaica.

P. jamaicensis stoddardi (Coale). Eastern U.S.A.

P. jamaicensis coturniculus (Ridgw.). Western U.S.A.

Porzana salinazi (Phil.). Chili.

Porzana spilonota sharpei Rothsch. Galapagos Islands. (Except James Island.)

Hypotænidia wakensis Rothsch. Wake Island. (Completely extinct.)

Gallirallus earli (Gray). N. & S. Islands, New Zealand.

Gallirallus australis (Sparrm.). S. Island, New Zealand.

Gallirallus brachypterus (Lafr.). S. Island, New Zealand. (The New Zealand "Woodhens" are much better known under the generic name of *Ocydromus*, but *Gallirallus* has priority.)

Megacrex inepta (Salvad. & D'Albertis). S. New Guinea.

Eulabeornis castaneiventer Gould. Australia.

E. pœcilopterus (Hartl.). Fiji Islands.

E. woodfordi (O. Grant). Solomon Islands.

Tricholimnas sylvestris (Scl.). Lord Howe Island.

Mr. A. L. Butler exhibited two specimens of a rare Parrot, *Pyrrhura viridicata* Todd (Proc. Biol. Soc. Washington, xxvi. 1913, p. 174), from the Santa Marta

region of Colombia. The species is so far known only from seven other skins, all of which are in American museums, and Mr. M. A. Carriker, Jr., from whom Mr. Butler received the birds, is the only collector who has obtained it.

The Rev. F. C. R. Jourdain, speaking with reference to recent supposed records of breeding of the Fire-crest (*Regulus ignicapillus*) in the British Isles, pointed that, although the distinctive characters usually given were frequently useful in the case of migrants on low bushes which allowed close inspection, they were quite ineffective in the case of birds breeding high up in conifers. Here a much more useful criterion was the difference in the songs of the two species, which was confirmed by the speaker's recent observations on Fire-crests in Algeria. It is significant that this distinction was not observed in the supposed cases of breeding in England. "Sight-records" by observers unacquainted with the species in question, should be accepted only after careful investigation and confirmatory evidence regarded as essential before publication in a scientific journal.

Mr. J. Delacour exhibited on behalf of Dr. Kuroda two very beautiful paintings by the Japanese artist, Mr. Kobayashi, of the very rare Duck *Pseudotadorna cristata*. These paintings were made from two skins in Dr. Kuroda's possession which were obtained some years ago in Corea.

These two specimens and the one at Copenhagen, which was exhibited at one of the meetings of the Club by Mr. Hachisuka, are the only known examples.

Mr. Delacour exhibited and described, on behalf of M. P. Jabouille and himself, twenty-one new forms of birds collected in Indo-China during their fourth expedition in 1927–1928 :—

Gennæus lewisi, sp. nov.

Male. Head, with a long crest, chin, throat, fore neck, and rest of underparts glossy black, the feathers having a

brownish shaft and base; the feathers of the sides have a white shaft and one or two V-shaped white lines, which are gradually reduced to a pale shaft towards the middle of the breast. Each feather of the sides and back of the neck with three concentric black and white marks.

Mantle black, lined with white, each feather having three V-shaped white bars, one very close to the shaft, which is dark, and one subterminal—these white lines being about 1 mm. in width.

Primaries, secondaries, and upper tail-coverts black, with the same white lines, one centimetre distant from one another about. Under wing-coverts greyish black with white lines. Upper wing-coverts like the back.

Rectrices black, more narrowly barred with white. The central pair is buffish grey on the outer web, finely peppered with black near the shaft and the border; the outer web barred black and greyish white, passing to greyish buff near the tip. The next pair is intermediate in colour and pattern between the middle pair and the others.

The crest is rather long and the tail short. Iris orange-yellow; skin of the face scarlet; bill horny whitish green, with darker base, legs and feet bright crimson; spur and nails horny white.

Measurements. Wing 240 mm.; tail 300; tarsus 80; culmen 48.

Female. Crest long, reddish brown, with pale shafts to the feathers; head, throat, and neck pale greyish brown. Mantle mottled pale greyish brown and reddish brown, each feather being of the latter colour, with a whitish shaft and a heart-shaped patch of greyish at the tip; towards the lower back and on the rump, these become a broad terminal border. The whole of the feather is more or less spotted with minute dark streaks and blotches. Wing-coverts like back; primaries reddish brown outside, blackish inside; secondaries dark brown with a reddish outer border, peppered with blackish; tertiaries reddish brown, peppered with blackish.

Rectrices bright chestnut, the central pair with lighter

borders and tip, and much peppered with dark brown; upper and lower tail-coverts chestnut, with light border and tips, and peppered with brown, with light shafts. Lower parts pale greyish brown, tinged with yellowish on the sides and flanks, and white feather-shafts.

Iris brown; skin of face cherry-red; bill horny green; legs and feet crimson, nails grey.

Measurements. Wing 220 mm.; tail 230; tarsus 73; culmen 26.

Types in the British Museum. ♂, Bokor (S. Cambodia, 1000 metres), 9.xii.1927, No. 699. ♀, Bokor, 13.xii.1927, No. 800. Brit. Mus. Reg. No. 1928.6.26.1 & 2.

Material examined. Ten specimens (7 ♂, 3 ♀) from Bokor. Wings, ♂ 240 to 250 mm., ♀ 210 to 220 mm.

N.B.—Named in honour of Mr. John Spedan Lewis, whose generosity enabled the British Museum to share in the results of the expedition.

This fine new Pheasant is confined to the isolated plateau of southern Cambodia, and is not closely related to either *Gennæus lineatus sharpei* of Siam or to *G. nycthemerus annamensis* of the highlands of southern Annam.

Gennæus nycthemerus berliozi, subsp. nov.

Male intermediate between *G. n. ripponi* and *G. n. beli*, very near *G. n. rufipes*, but with broader and better-defined black and white bars, and a shorter tail.

Female very similar to that of *G. n. beli* with a slightly longer tail and more vermiculation on the outer rectrices. Differs widely from ♀ *G. n. rufipes* in having a practically plain brown breast. Legs of both sexes crimson.

Measurements. ♂, wing 260 mm., tail 380.

Type in the British Museum. ♂, Quangtri (Central Annam, 700 metres), 8.ii.1926. No. H. 1808. Brit. Mus. Reg. No. 1927.6.5.203.

Material examined. Two specimens (♂ and ♀), and many alive in our collection.

N.B.—Named in honour of M. Jacques Berlioz.

Arborophila cambodiana, sp. nov.

A very distinct, not closely related to any other, species.

Head bright rufous-chestnut, with black occiput and nape, and with the upper part of ear-coverts dark brown. Front and sides of the neck chestnut, the feathers being bordered with black, producing a darker appearance; hind neck black.

Feathers of the mantle barred black and olive-brown, the black being predominant in some specimens on the upper back and becoming almost obsolete in others on the rump.

Wings and tail as in *A. brunneopectus*, but of a richer tinge. Under wing-coverts buff and blackish brown.

Upper breast rich uniform rufous-chestnut; lower breast mottled black, white, and chestnut, each feather having near the tip a white centre, surrounded by a double band of black and chestnut, the base being mostly black. Flanks and sides of body black and white and chestnut, each feather being black and chestnut at the base, with a broad white patch and black tips. Feathers of abdomen white with a broad buff border, becoming paler on the lower part. Under tail-covert buffish chestnut.

Iris brown; eyelids dark purplish red; bill black; legs and feet lilac-pink; nails pink.

Female similar to male, but smaller, with lower breast less strongly mottled, and less black on upper parts.

Measurements. ♂: wing 150 mm.; tail 65; tarsus 45; culmen 19; gape 25. ♀: wing 136 mm.; tail 63; tarsus 40; culmen 18; gape 22.

Types in the British Museum. ♂ ♀, Bokor (S. Cambodia, altitude 1000 metres), 14 & 16.xii.1927. Nos. 814, 849. Brit. Mus. Reg. No. 1928.6.26.3 & 4.

Material examined. Nine specimens (6 ♂, 2 ♀, 1?) from Bokor.

Arborophila rufogularis guttata, subsp. nov.

Very close to *A. r. tickellæ*, but differs in having the whole of the throat spotted with black.

Measurements. Wing 145 mm.

Type in the British Museum. ♂, Bana (C. Annam, 1500 metres), 23.viii.1926, No. 699. Brit. Mus. Reg. No. 1927.6.5.149.

Material examined. Two specimens from Bana.

N.B.—These birds had been so far referred to *A. rufogularis laotiana,* a darker form from Xieng-Khouang (Laos) with an unspotted lower throat. Birds from Napé, S.E. of Xieng-Khouang, belong to the Burmese form *A. r. tickellæ.*

Tropicoperdix chloropus olivacea, subsp. nov.

Very closely allied to *T. c. chloropus* from Tenasserim and Siam, but of a more olivaceous, not so yellowish, brown above and on the upper breast. Lower breast less deep chestnut, fading to buffish-white towards the abdomen.

Iris brown; eyelids reddish grey; bill yellow, base red; legs and feet greenish yellow.

Measurements. Wing 161 mm.

Type in the Paris Museum. ♂, Napé (Laos, 800 metres), 7.ii.1928. No. 2376.

Material examined. Fifteen specimens (11 ♂, 4 ♀) from Bokor (S. Cambodia, 1600 m.), Napé (Laos, 800 m.), Nong-Het (Laos, 1000 m.), and Xieng-Khouang (Laos, 1200 m.). Wings 152 to 168 mm.

N.B.—This species is only found on mountains from southern Cambodia to northern Laos.

Ptilolæmus tickelli indochinensis, subsp. nov.

Resembles *P. t. austeni,* but differs in having its central rectrices narrowly tipped with white as in *P. t. tickelli.* Throat still whiter than in *P. t. austeni.*

Bill shorter and stouter than in the other two forms, with a less marked ridge.

Iris pale brown; bill yellowish brown; feet and legs greyish brown.

Measurements. Wing 315 mm.

Type in the British Museum. ♂, Khébon (N. Annam, 150 m.), 4.iii.1928, No. 3226. Brit. Mus. Reg. No. 1928.6.26.5.

Material examined. Three specimens (1 ♂, 2 ♀). From Khébon (N. Annam), Bana (C. Annam, 1500 m.), and Huê (C. Annam, sea-level).

Chrysophlegma flavinucha annamensis, subsp. nov.

Differs from *C. f. pierrei* from Cochin China and Cambodia in its richer and darker general colour, but is paler than *C. f. styani* from Hainan and Tonkin.

All specimens from Annam and Laos, from Dalat to Phuqui and Xieng-Khouang, are similar.

Measurements. Wing 167 mm.

Type in the Paris Museum. ♂, Khébon (N. Annam, 150 metres), 4.iii.1928, No. 3228.

Material examined. Fourteen specimens (8 ♂, 6 ♀) from Khebon and Phuqui (N. Annam), Napé (Laos, 800 m.), Xieng-Khouang (Laos, 1200 m.), and Dalat (S. Annam, 1500 m.). Wings 150 to 168 mm.

Pitta cyanea aurantiaca, subsp. nov.

Similar to *P. cyanea*, but differs in the very yellowish tinge of the sides of the head and nape.

Measurements. Wing 114 mm.

Type in the Paris Museum. ♂, Bokor (S. Cambodia, 1000 metres), 17.xii.1927, No. 855.

Material examined. Two specimens.

Criniger gutturalis cambodianus, subsp. nov.

Closely related to *C. gutturalis sacculatus*, from the south of the Malay Peninsula, but duller and not so yellowish above and lighter below.

Iris brown ; bill dark brown above, grey below ; legs and feet horny-flesh colour.

Measurements. Wing 108 mm.

Type in the Paris Museum. ♂, Bokor (S. Cambodia, 1000 metres), 7.xii.1927, No. 612.

Material examined. Twelve specimens (7 ♂, 4 ♀, 1 ?) from Bokor. Wings 100 to 112 mm.

Corythocichla griseigularis, sp. nov.

Differs from all forms of *C. brevicaudata*, to which it is allied, in having the throat and upper breast of a uniform grey colour, changing to brown on the lower breast and rufous-brown on the abdomen and under tail-coverts. Upper parts rather dark.

Iris reddish brown; bill black above, grey below; legs and feet fleshy brown.

Measurements. Wing 60 mm.

Type in the British Museum. ♂, Bokor (S. Cambodia, 1000 metres), 8.xii.1927, No. 649. Brit. Mus. Reg. No. 1928.6.26.6.

Material examined. Eight specimens (3 ♂, 3 ♀, 2 ?), from Bokor. Wings 58 to 62 mm.

Corythocichla annamensis, sp. nov.

Feathers of upper parts light olive-grey, brownish on the lower back, with blackish-brown borders, producing a squamated appearance as in other species of the genus. Rump brown. Wings olive-brown, with darker inner webs to the feathers. Tail rather long and of the same colour.

Throat spotted white and blackish brown, each feather being of the latter colour, with a large white spot on the middle of each web. Breast ashy grey, changing to dull brown on the sides and on the abdomen. Under tail-coverts rufous olive-brown.

Iris reddish brown; bill dark horny brown above, greyish below; legs and feet greyish brown.

Measurements. Wing 78 mm.; tail 77 mm.; tarsus 28 mm.; gape 25; 19 mm.

Type in the British Museum. ♂, Phuqui (N. Annam, 150 metres), 23.ii.1928. No. 3192. Brit. Mus. Reg. No. 1928.6.26.7.

Material examined. Eight specimens from Phuqui and Khébon (N. Annam, 150 metres). Wings 73 to 78 mm.

N.B.—This distinct new bird lives entirely amongst limestone rocks, as does its congener *C. crispifrons* in Burma. It seems unnecessary to maintain for these two species the generic name *Cursonia* (= *Gypsophila*).

Schœniparus rufogularis blanchardi, subsp. nov.

Differs from *S. r. major*, from Middle Laos, in its smaller size, more olivaceous, less yellowish underparts, browner breast, duller brown under tail-coverts.

From *S. r. stevensi*, from Tonkin, it differs in its much better-defined and brighter rufous necklace, its whiter throat, and lighter breast and abdomen.

Measurements. Wing 57 mm.

Type in the British Museum. ♂, Phuqui (N. Annam, 150 metres), 23.ii.1928, No. 3140. Brit. Mus. Reg. No. 1928.6.26.8.

Material examined. Three specimens (1 ♂, 2 ♀) from Phuqui (N. Annam) and Xieng-Khouang (N. Laos, 1200 metres). Wings 55 to 59 mm.

N.B.—Named in honour of M. Blanchard de le Brosse, Governor of Cochin-China.

Erpornis xantholeuca canescens, subsp. nov.

Of a duller and greyer yellowish green above than all other forms, especially on the nape and hind neck. Feathers of the crown with very apparent dark shafts and centre.

Iris brown; bill brown above, lighter below; legs and feet flesh-colour.

Measurements. Wing 68 mm.

Type in the British Museum. ♂, Bokor (S. Cambodia, 1000 metres), 7.xii.1927, No. 616. Brit. Mus. Reg. No. 1928.6.26.9.

Material examined. Five specimens (1 ♂, 4 ♀) from Bokor. Wings 64 to 68 mm.

Notodela cambodiana, sp. nov.

Dark slaty bluish grey above and below, with a lighter grey tinge on abdomen. Feathers of the flanks and under tail-coverts tipped with whitish. Two white patches on the sides of the neck. Rectrices with basal part of the outer webs white, except the two central ones. Lesser wing-coverts of a slightly brighter bluish grey. Forehead without any bright blue.

Iris brown; bill, feet, and legs black.

Measurements. Wing 87 mm.; tail 73; tarsus 24; gape 20; culmen 15.

Type in the British Museum. ♂, Bokor (S. Cambodia, 1000 metres), 13.xii.1927, No. 795. Brit. Mus. Reg. No. 1928.6.26.10.

Material examined. Two ♂ from Bokor.

Cissa concolor, sp. nov.

Nearer to *C. hypoleuca* in its strong thick bill, short tail, and wing pattern.

Head and crest yellowish green, slightly olivaceous; a broad black line from lores to nape.

Mantle yellowish grass-green.

Wings coppery red, with green lesser coverts; tertiaries tipped with bluish-green.

Central rectrices olive-green, with bluish tips; others olive-buff, with broad subterminal black bands and basal part of outer webs greenish.

Whole of underparts apple-green.

Iris, eyelids, bill, legs, and feet coral-red.

Measurements. Wing 160 mm.; tail 156; tarsus 49; gape 39; culmen 34.

Type in the Paris Museum. ♂, Phuqui (N. Annam, 150 m.), 19.ii.1928, No. 3013.

Material examined. One ♂ only.

N.B.—Also we often saw and heard Cissas of this species near Phuqui, it was impossible to secure more specimens, so wild and cunning these birds are.

Bhringa remifer lefoli, subsp. nov.

Nearer to *B. r. peracensis* from Siam and southern Annam, but with still much longer, narrower, and more tapering tail-rackets. Female with shorter shafts and rackets than males.

Measurements. Wing 130 mm.; tail 580 (feather 125; denudated shaft 125; racket 330).

Type in the Paris Museum. ♂, Bokor (S. Cambodia, 1000 m.), 16.xii.1927, No. 836.

Material examined. Eight specimens (6 ♂, 2 ♀) from Bokor. Wings 130 to 139 mm.

N.B.—Named in honour of M. H. Le Fol, Resident Superior in Cambodia.

Amandava amandava decouxi, subsp. nov.

Differs from *A. a. amandava* from India in its smaller size, its more carmine and deeper red tinge, fewer and smaller white spots on the wings, sides of body, and tail-coverts, its browner back, hind neck, and middle of crown.

Females darker above than in *A. a. amandava*, with darker and more crimson upper tail-coverts, and with fewer and smaller white spots.

Measurements. Wing 45 mm.

Types in the Paris Museum. ♂, Siem-Reap (Cambodia, sea-level), 28.xii.1927, No. 1349. ♀, Saigon (Cochin-China, sea-level), 10.i.1928, No. 1613.

Material examined. Eight specimens (4 ♂, 4 ♀) from Siem-Reap and Saigon. Wings 42 to 46 mm.

N.B.—Named in honour of M. A. Decoux.

All aviculturists have known for many years that the so-called "Chinese" Amadavats differ from the Indian one, and have designed them by different names. But no wild shot specimens had ever been collected. They are exported by the thousands as cage-birds from Saigon.

Æthopyga siparaja insularis, subsp. nov.

Differs from *Æ. s. mangini* from Annam and Cochin-China in being of a slightly brighter red, and having the lower back orange-yellow instead of golden yellow.

Measurements. Wing 52 mm.

Type in the British Museum. ♂, Island of Phu-Quoc (Coast of Cochin-China), 25.xii.1927, No. 898. Brit. Mus. Reg. No. 1928.6.26.11.

Material examined. Four ♂ specimens. Wings 52 to 57 mm.

Leptocoma braziliana emmæ, subsp. nov.

Differs from *L. b. braziliana* in its deeper violet, less pinkish, throat, its duller and darker red colour on the breast.

Measurements. Wing 86 mm.

Type in the Paris Museum. ♂, Island of Phu-Quoc (Coast of Cochin-China), 30.xii.1927. No. 986.

Material examined. Twelve ♂ Phu-Quoc, An-Binh, Tay-Ninh (Cochin-China, sea-level), Djiring (S. Annam, 1000 metres).

N.B.—Named in honour of Mme E. Jabouille.

Leptocoma asiatica hachisukai, subsp. nov.

Differs from *L. a. intermedia* in having the upper parts of a uniform steel-blue colour, instead of having a subterminal green band to the feathers.

Measurements. Wing 55 mm.

Type in the Paris Museum. ♂, Kompong-Thom (Cambodia, sea-level), 3.i.1928, No. 1474.

Material examined. Seven ♂ from Kompong-Thom and Sambor (Cambodia) and Daban (S. Annam, 400 metres). Wings 55 to 58 mm.

N.B.—Named in honour of M. Masauji Hachisuka.

One specimen from Saravane (Laos) belongs to *L. a. intermedia*. Specimens from southern Siam and Burma are nearer to the present form.

Dicæum beccarii cambodianum, subsp. nov.

Similar to *D. beccarii* from Sivlak Daras, Korinchi, Sumatra (1000 metres), but paler below, with a longer bill.

Iris brown; legs and feet black.

Measurements. Wing 49 mm.; tail 22; tarsus 13; culmen 9; gape 11.

Type in the British Museum. ♂ (breeding), Bokor (S. Cambodia, 1000 metres), 10.xii.1927, No. 705. Brit. Mus. Reg. No. 1928.6.26.12.

Material examined. One specimen.

Note.

Correction (Bull. B. O. C. vol. xlvii.).

P. 153. The type of *Megalæma lagrandieri rothschildi* is said to be in the British Museum—it should read "Paris Museum."

P. 161. The type of *Drymocataphus pusillus* is said to be in the Paris Museum—it should read "British Museum."

P. 170. The type of *Picus chlorolophus harmandi* is said to be in the Paris Museum—it should read "British Museum."

Admiral H. Lynes communicated the following on behalf of Professor Oscar Neumann and himself :—

Cisticola robusta omo Neum. & Lynes, subsp. nov.

Description. Compared with typical *C. r. robusta* Rüpp. of the Central Abyssinian Plateau. Size, proportions, and colour-pattern similar, but coloration throughout markedly darker and richer; head-top and mantle extremely black, the pale feather-borders so narrow that abrasion ultimately causes these parts to appear not far from uniform black.

Hab. S.W. Abyssinia, viz. to the southward and westward of the upper Hawash valley—more or less represented by, and confined to the higher ground of the Omo River watershed.

Type in Neumann Coll., Berlin, a breeding adult male. Collected by Professor O. Neumann at Kankati in Jimma territory, S.W. Abyssinia, on 29th May, 1925. Wing 75 mm., tail 52.

Obs. Professor Neumann collected eight breeding adults and one fledged young in Jimma during May 1925, and the new race is also represented in the British Museum Collection by six adult specimens. Note this further addition to the list of richly-pigmented birds inhabiting the Omo basin—cf. *Cercomela familiaris omoensis* (Neum.), *Anthus gouldi omoensis* Neum., *Emberiza forbesi omoensis* Neum., etc.

Further details of *omo* will be published in my Review of the Cisticolæ, MS. of which is now approaching completion.

The latter will contain the first publication of a number of new names for which I shall be solely responsible. We think it best to announce "*omo*" separately, in order that our joint authorship may be clearly indicated.—H. L.

Errata.

P. 110, line 6, *for* organs *read* hormones.
P. 119, 3 lines from bottom, *for* Prof. Rocors *read* Prof. Rowan.

NOTICES.

The next Meeting of the Club will be held on Wednesday, October 10, 1928, at PAGANI'S RESTAURANT, 42–48 Great Portland Street, W. 1. The Dinner at 7 p.m.

Members intending to dine are requested to inform the Hon. Secretary, Dr. G. Carmichael Low, 86 Brook Street, Grosvenor Square, W. 1.

ANNUAL GENERAL MEETING.

This will also be held at PAGANI'S RESTAURANT on Wednesday, October 10, 1928, at 5.45 p.m. An Agenda and Balance Sheet will be issued in September.

Members who intend to make any communication at the next Meeting of the Club are requested to give notice beforehand to the Editor, Mr. N. B. Kinnear, at the Natural History Museum, South Kensington, S.W. 7, and to give him their MSS. for publication in the 'Bulletin' not later than at the Meeting.

INDEX.

[Names of new species and subspecies are indicated by clarendon type under the generic entry only.]

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